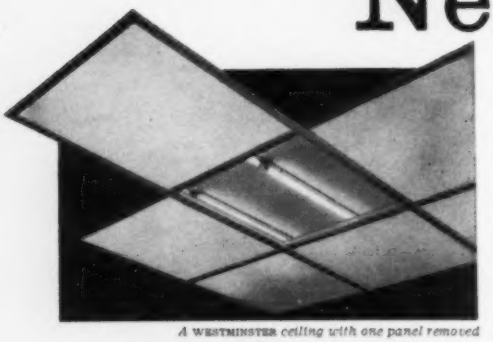
Design

Council of Industrial Design 152 August 1961 Price 3s

New light on lighting



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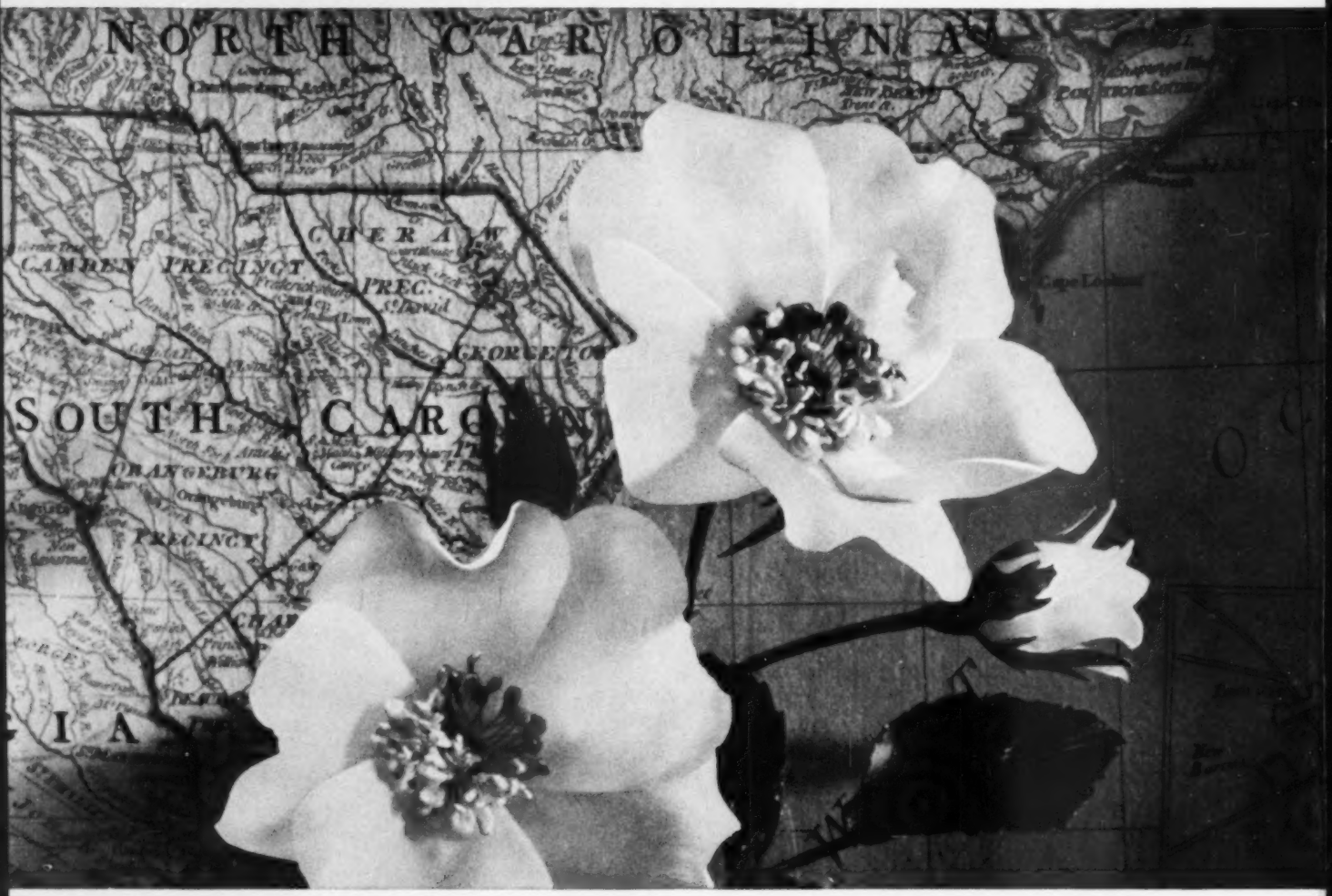

PRITCHARD

In a field in North Carolina where cotton once grew, a £20,000,000 chemical plant has now arisen. Here Fiber Industries Incorporated is producing a new synthetic fibre known as 'Fortrel', whose silk-like threads, cascading out of spinnerets, are going to textile mills throughout America. But among the voices to be heard above the whirr of machinery are some that are unmistakably English; for this is a joint venture by Britain's leading chemical company, I.C.I., and Celanese Corporation of America, in which experts from I.C.I.'s 'Terylene' polyester fibre plants in Yorkshire are supplying the scientific skills.

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You are cordially invited to visit the Peacock Room at Farringdon House, Warwick Lane (Off Newgate St.) E.C.4. Enquiries to:

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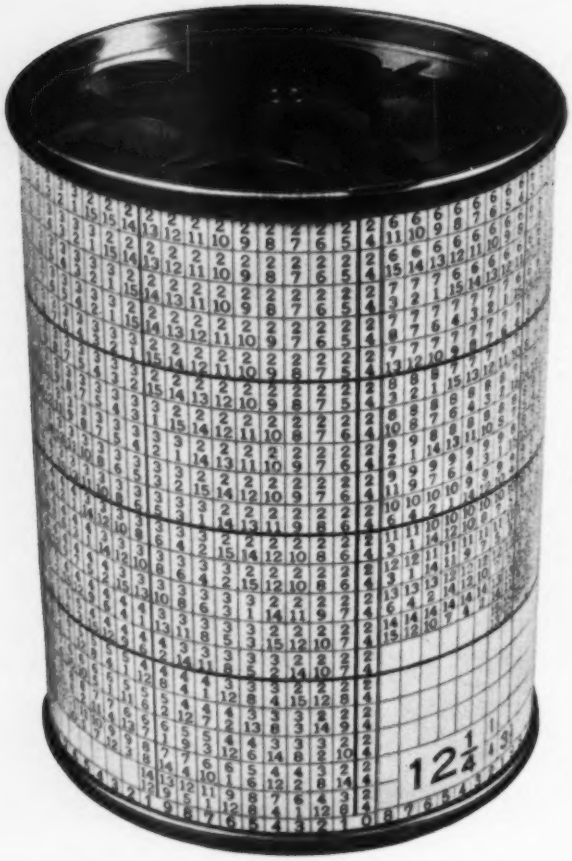

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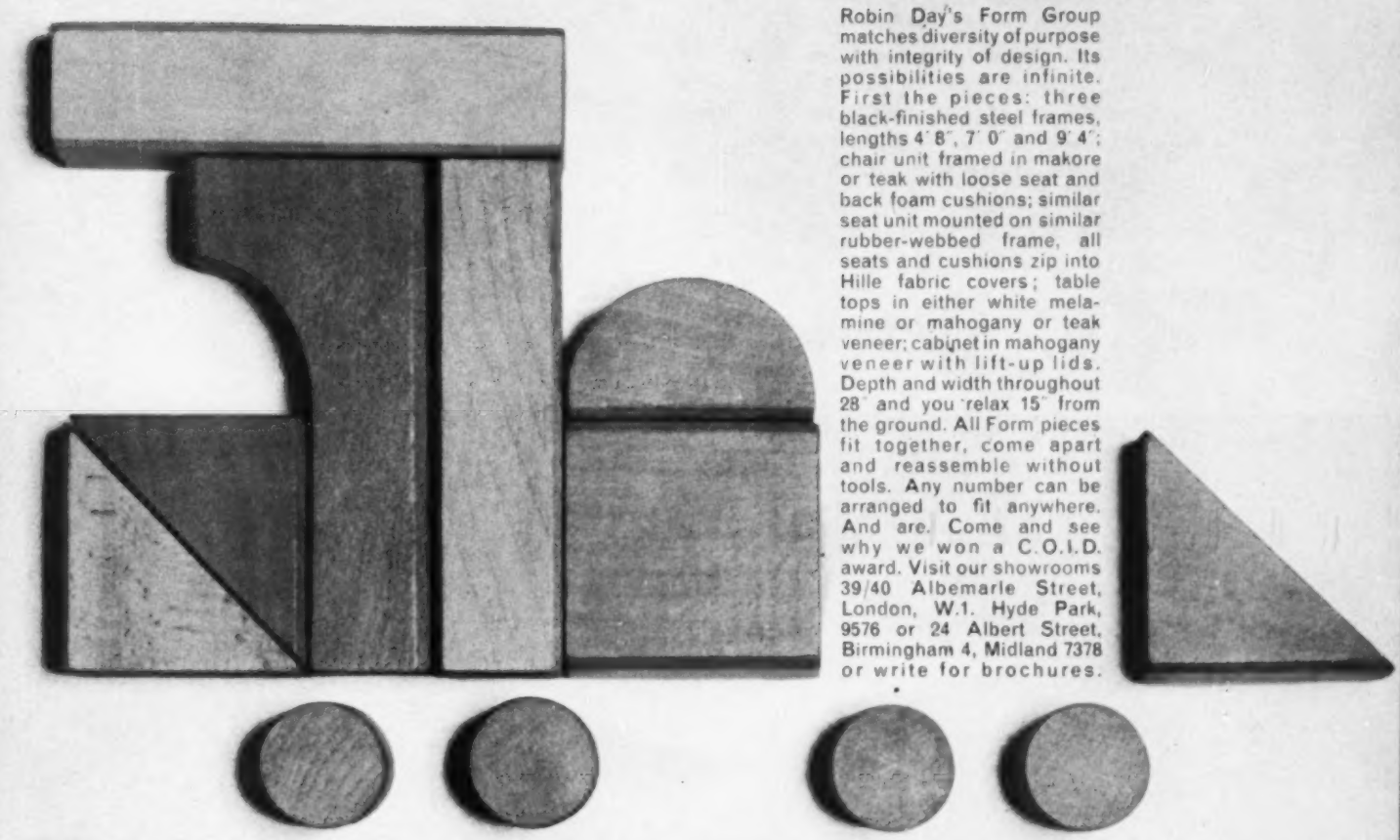

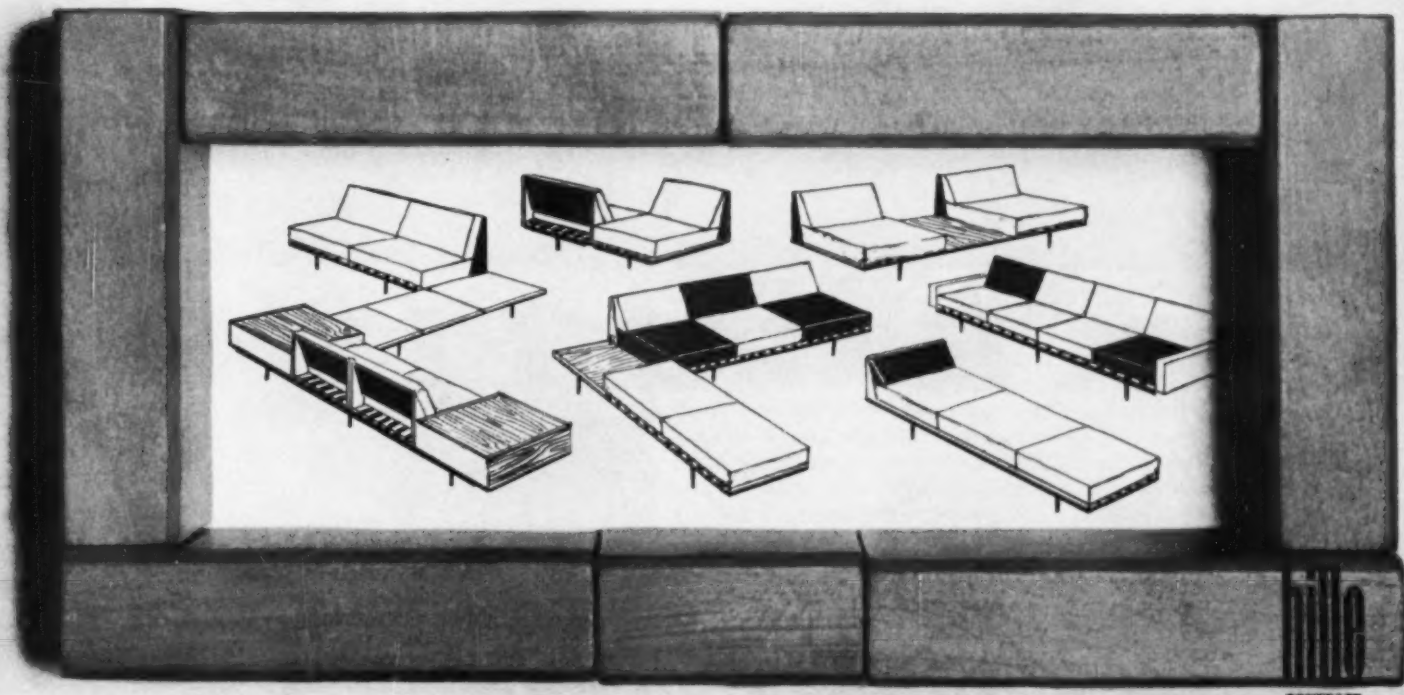

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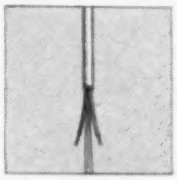

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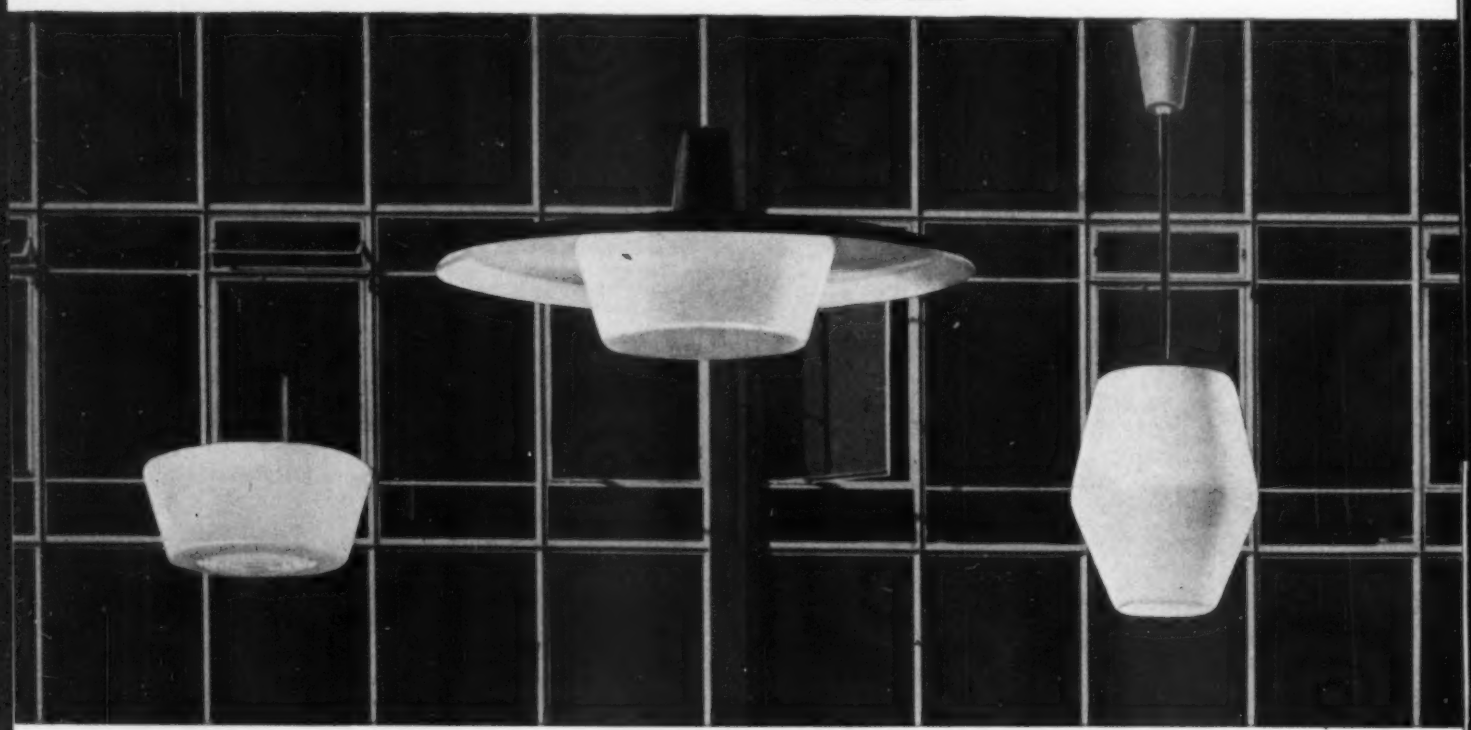

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With acknowledgements to the B.B.C.

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"THELMA" stands for THE LINOLEUM MANUFACTURERS' ASSOCIATION, 127 VICTORIA STREET, LONDON, S.W.1. *For further information write to the Association or to any of the following members:* BARRY OSTLERE & SHEPHERD LTD., Kirkcaldy · DUNDEE LINOLEUM CO. LTD., Dundee · LINOLEUM MANUFACTURING CO. LTD., 6 Old Bailey, London, E.C.4 · MICHAEL NAIRN & CO. LTD., Kirkcaldy · NORTH BRITISH LINOLEUM CO. LTD., Dundee · SCOTTISH CO-OPERATIVE WHOLESALE SOCIETY LTD. Falkland, Fife · JAS. WILLIAMSON & SON LTD., Lancaster.

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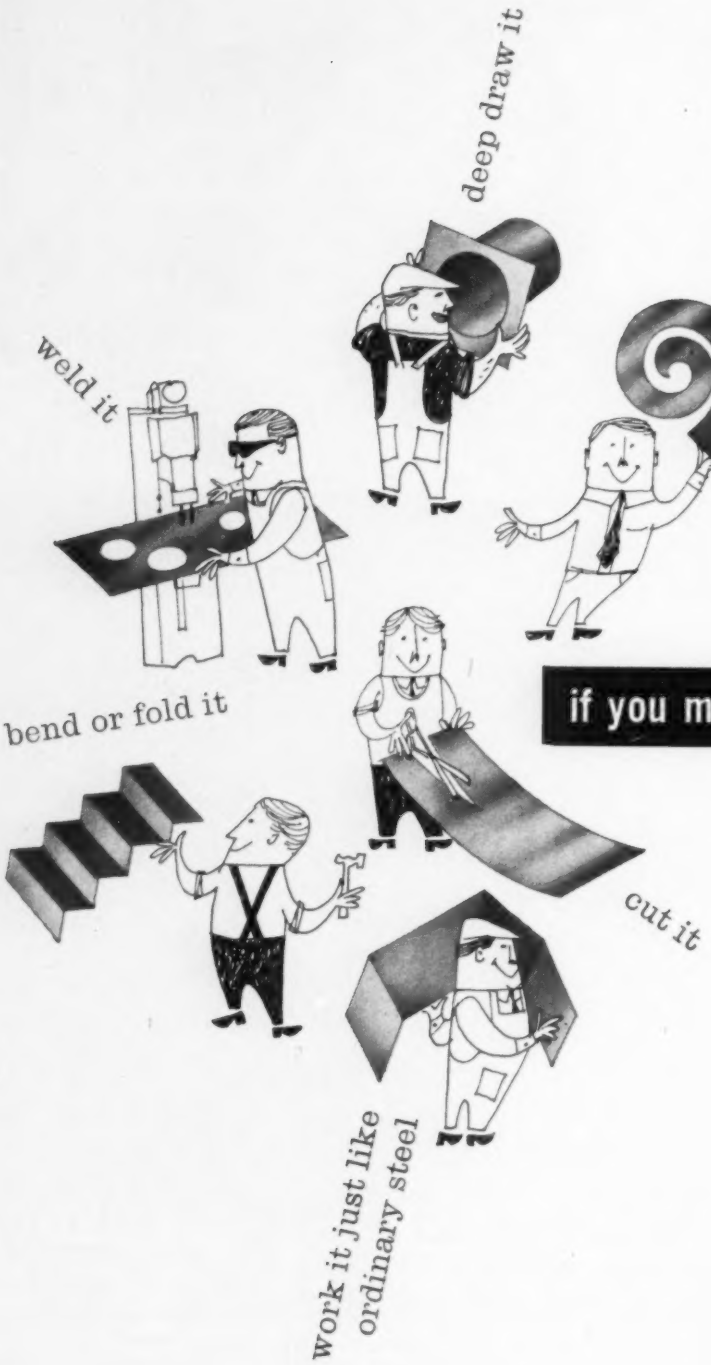

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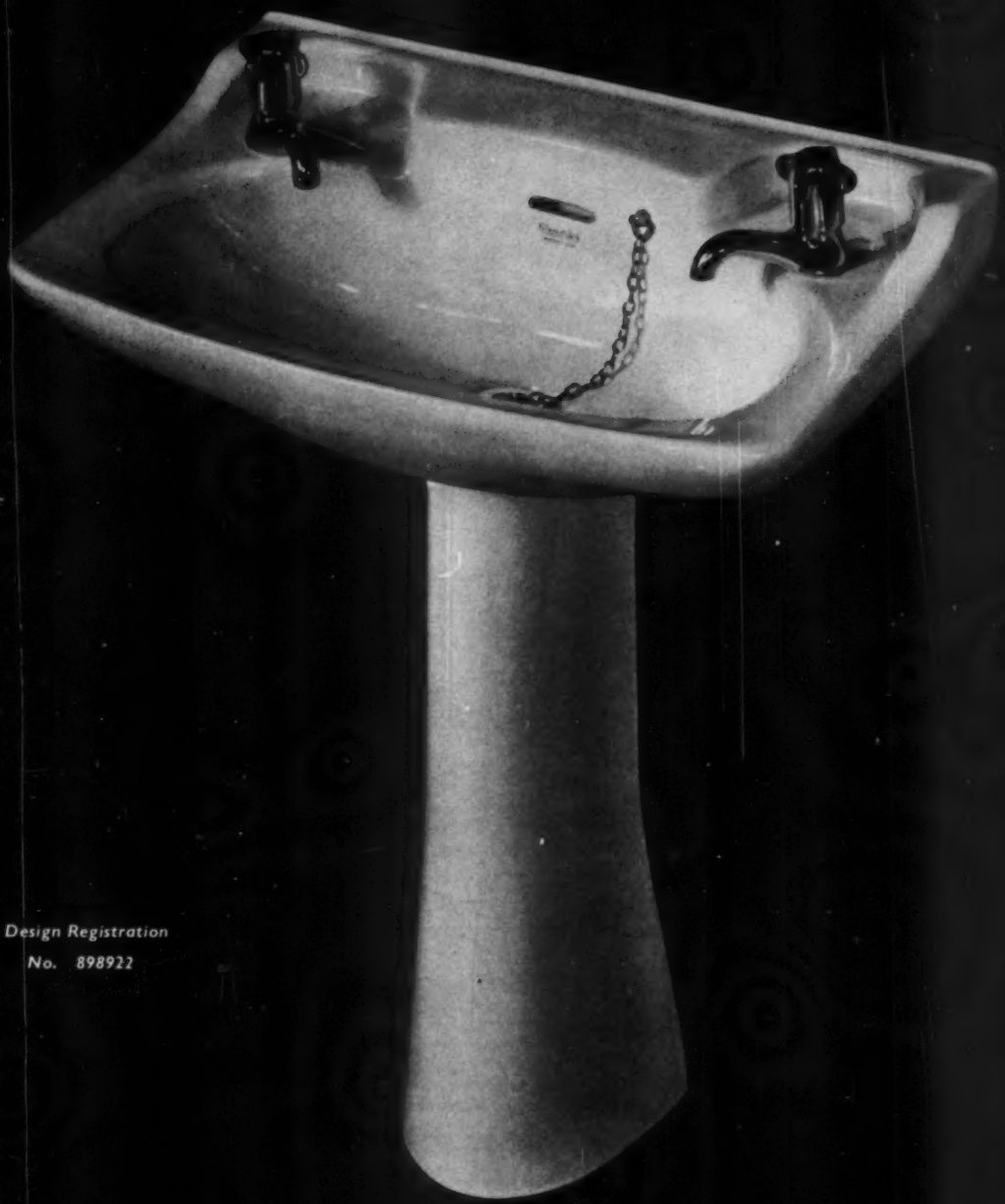

Design Registration
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AVON

IN VITREOUS CHINA

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Illuminated signs in 'Perspex' were chosen for this Liverpool bus station

Here is another example of what good design, fluorescent lighting and 'Perspex' can do to make signs good-to-look-at and easy-to-read by day or by night.

All the directional signs inside this bus station—and the Company sign over the door—have been made entirely from 'Perspex' acrylic sheet. They are internally illuminated by fluorescent tubing. The makers are Nightingale Products Limited of Blackburn.

Red 'Perspex' letters cemented to a ¼" Opal 'Perspex' background make up the face panels to these signs, all of which have a surrounding black frame consisting of a double lamination of ¼" 'Perspex'.

'PERSPEX'

'Perspex' is the registered trade mark for the acrylic sheet manufactured by I.C.I.

P639

IMPERIAL CHEMICAL INDUSTRIES LIMITED · LONDON · S.W.1

ICI

The directional signs and the Company sign illustrated here were made from 'Perspex' acrylic sheet by Nightingale Products (Blackburn) Limited, Feniscowles, Blackburn, for the Skelhorne Street, Liverpool, Bus Station of Ribble Motor Services Limited, Preston.

Construction problem

It isn't just a matter of putting them one on top of another.
There's more to it—the lie of the carpet and
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Maybe his urge to build will stay with him, and when he grows up
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Its grades are tailor made to meet the needs of your
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Ask Shell Chemical Company Limited,
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SHELL and CARINEX are registered trade marks.

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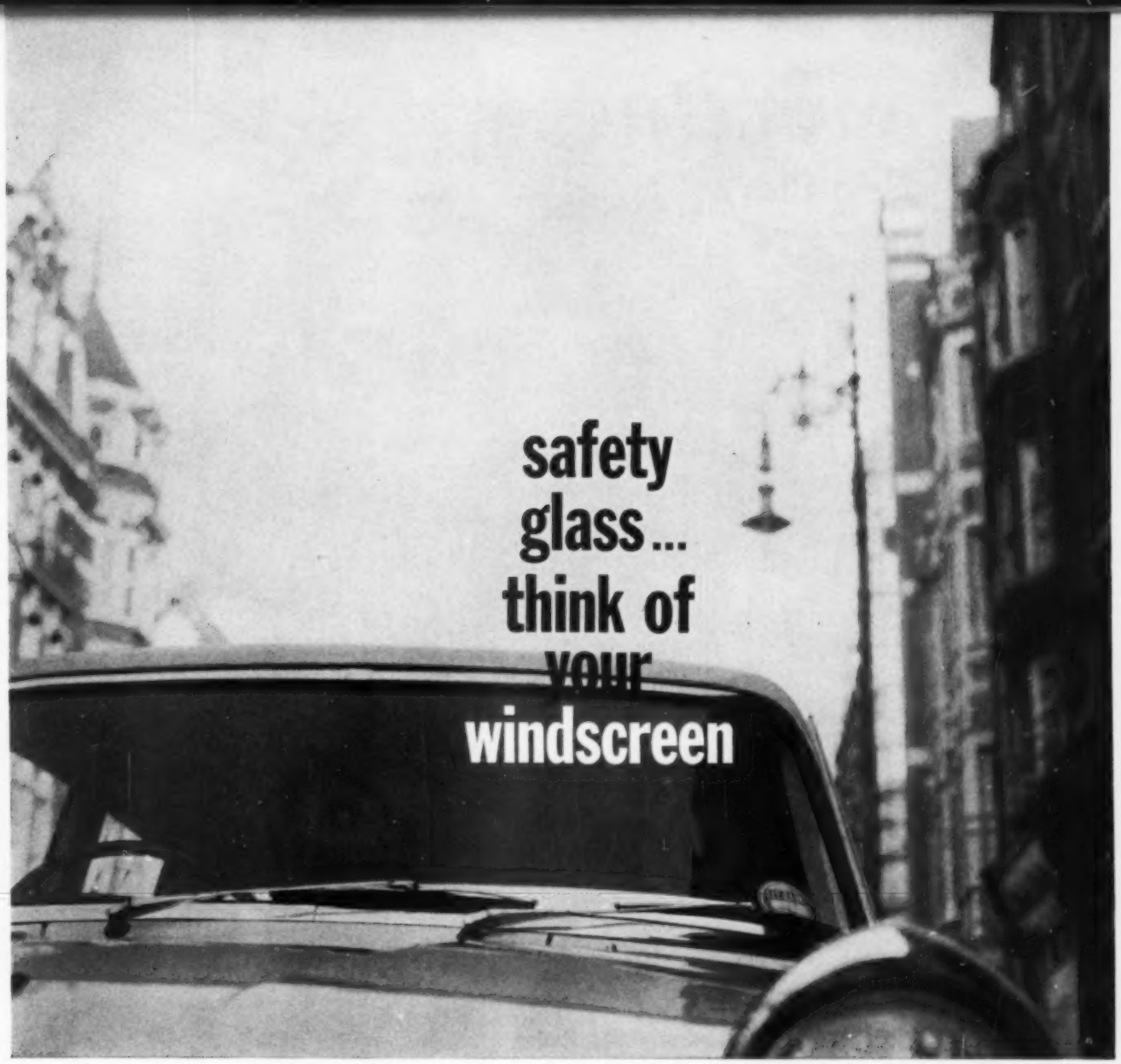
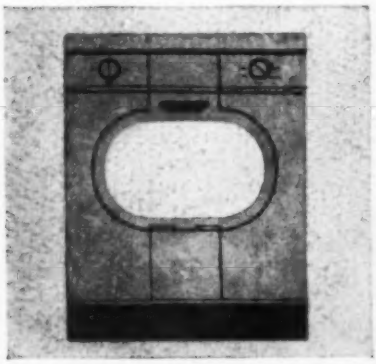
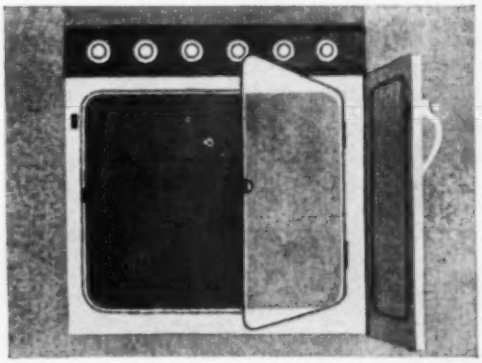
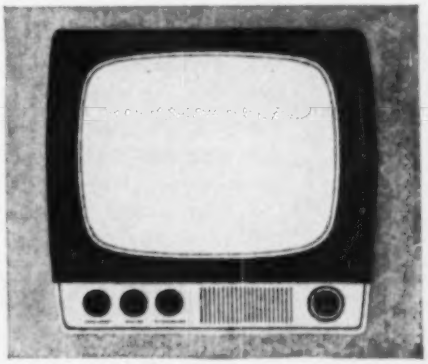


Now...**TRIPLEX** Toughened Glass as an aid to design







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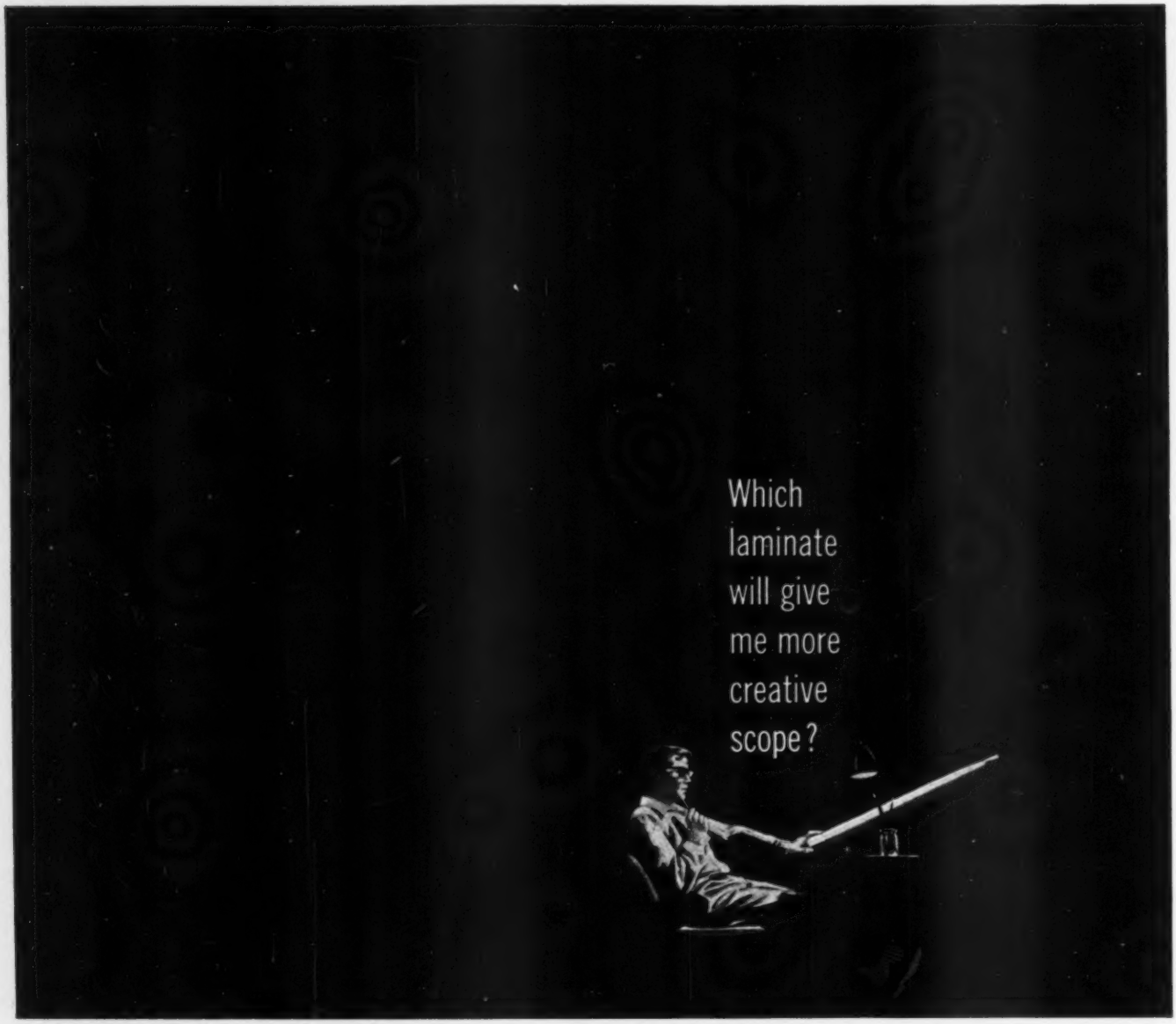

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Designed by William F. Plunkett, Second Year Student at Kingston-upon-Thames School of Art. Prototype developed and made by the designer.

2nd
A unit chair on wooden frame with interchangeable seat and back cushions.
Designed by Paul Goble, NDD and Dorothy Goble.
Prototype developed and made by
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3rd
A fully-upholstered chaise-longue of advanced design and construction, with aluminium underframe and main frame of preformed polystyrene.
Designed by Geoffrey B. Callister, Fourth Year Student at the LCC Central School of Arts and Crafts, London.
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The Directors of Aeropreen congratulate the winners of the Aeropreen Award 1961 on their fine achievements, and are happy to announce that owing to the very great interest that this Award aroused there will be a further Award in 1962, when the scope will be widened.

Highly Commended

Fibreglass easy chair designed by Walter Fletcher and Peter Conn, City of Leeds College of Art. Upholstery by Mines and West Ltd.
Wood frame chair designed by Michael Knott, DES.RCA, NDD.
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Veneered laminated plywood armchair designed by Anthony G. F. Miller, DES.RCA.
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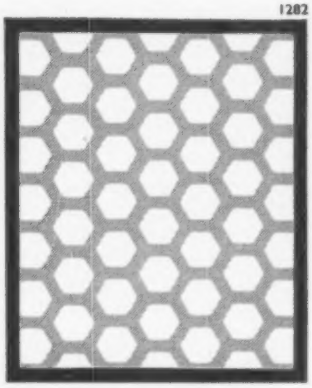

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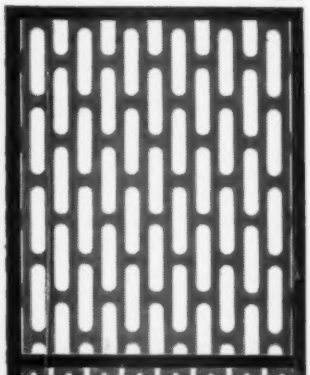

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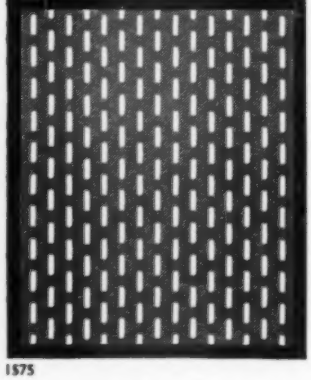

Patterns illustrated are shown half-size

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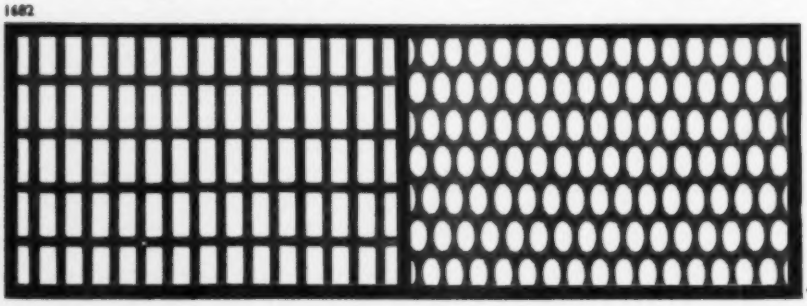

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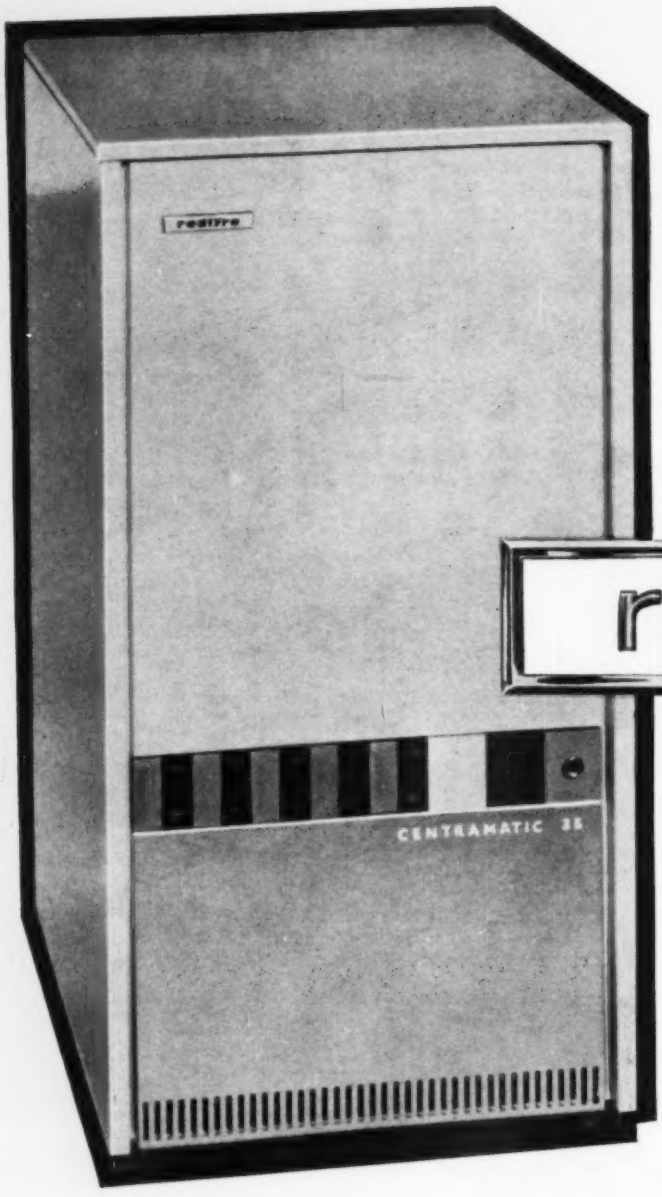

. . . and the name is right as well!

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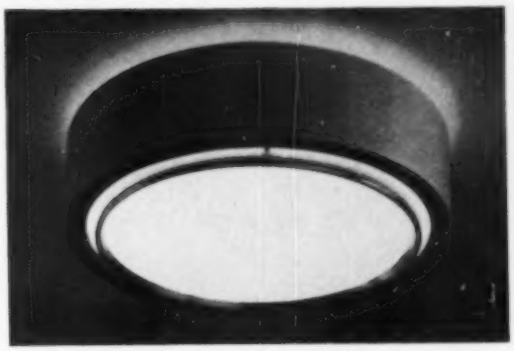

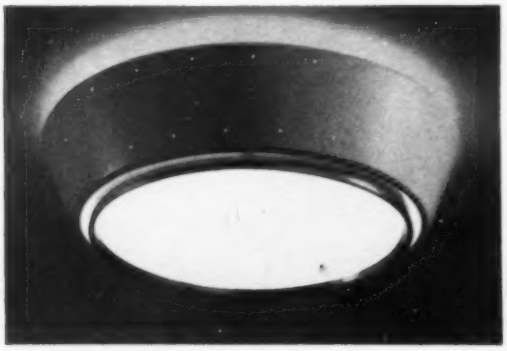

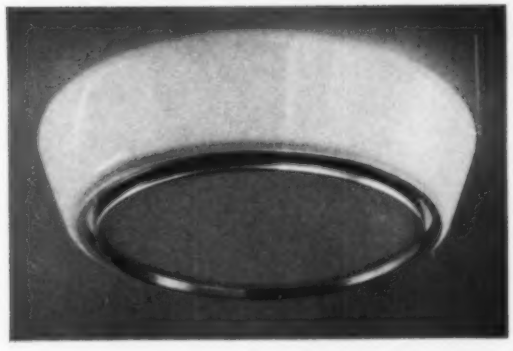

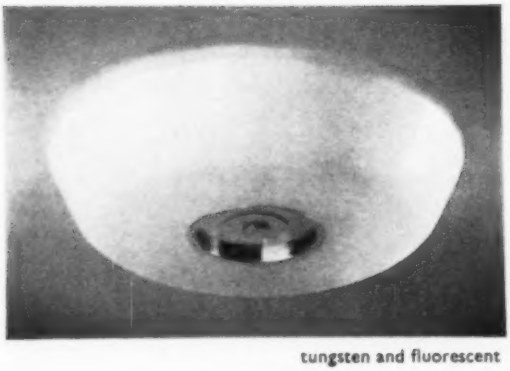

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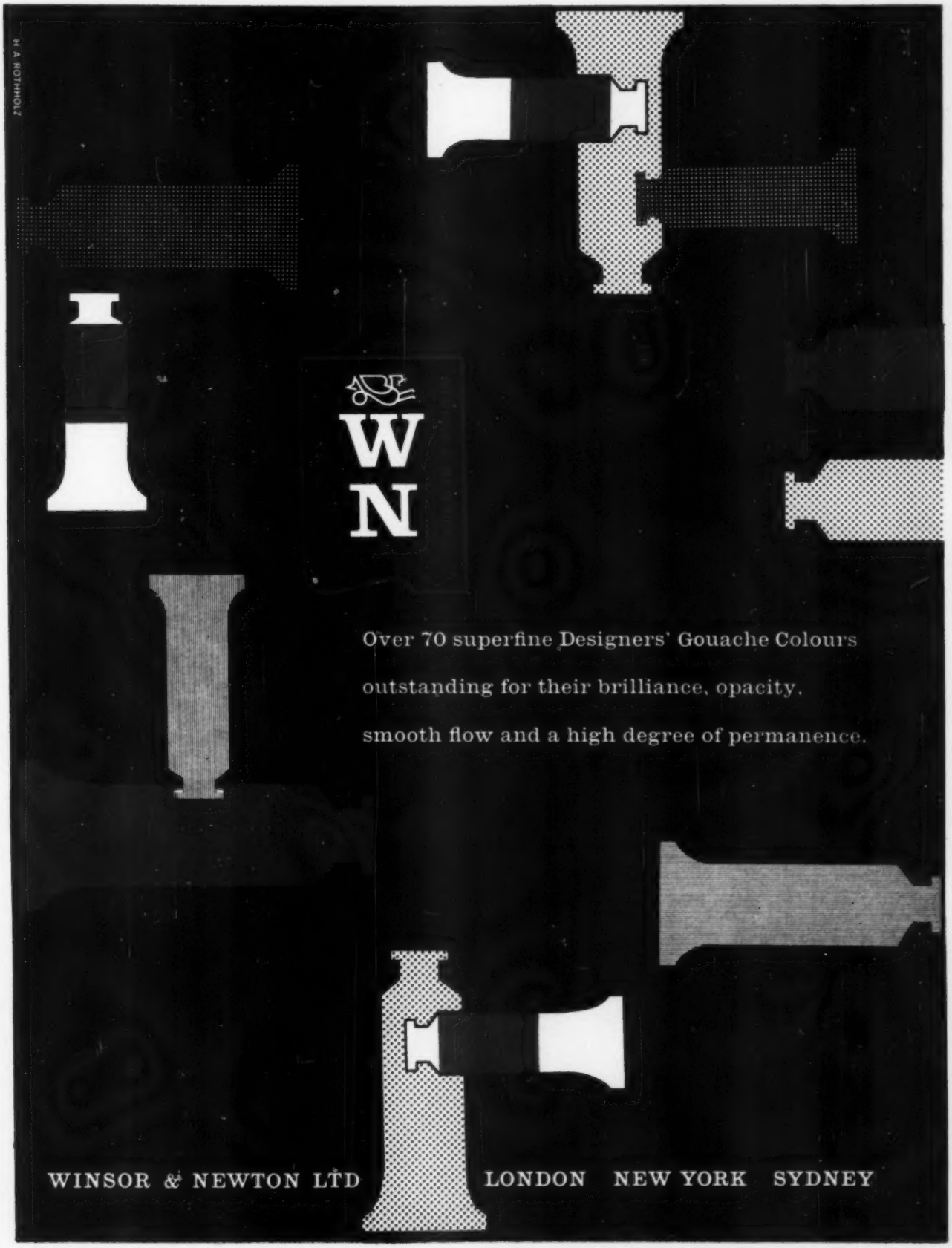
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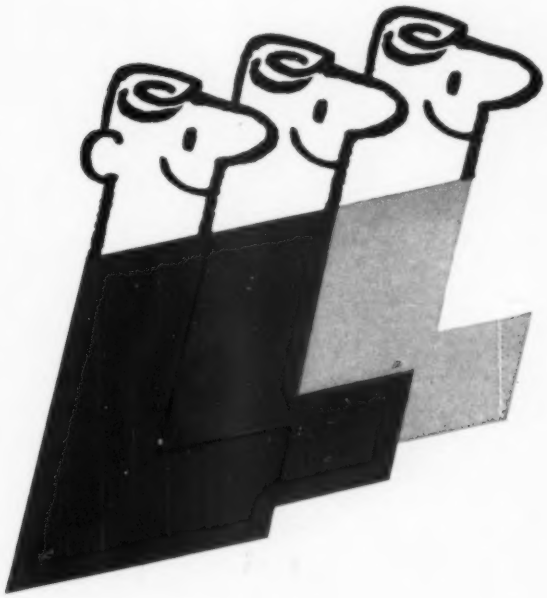

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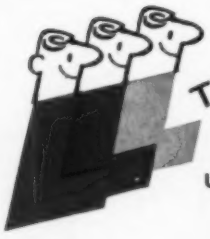

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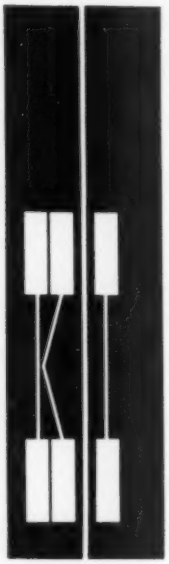

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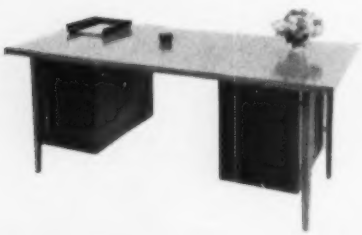

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Comment by Richard Llewelyn Davies

Professor of Architecture, University College, London. Previously Director of the Division for Architectural Studies, Nuffield Foundation.

User requirements in hospital design

The present increase in hospital building will shortly result in a considerable market for hospital equipment and hospital furniture. It cannot be claimed that the products at present on the market are as good as they could and should be. In this connection, I welcome the proposal to establish a research unit at the Royal College of Art for the study of design of hospital equipment, supported financially by the Nuffield Foundation (DESIGN 151/83).

Up to date, new thought on hospital equipment has largely been a by-product of research into the function and design of hospitals. This has brought to bear on existing products some effective criticism from the point of view of the users. It has also resulted in the production of a certain number of experimental designs, such as the ward light fittings evolved at the Building Research Station as part of the Nuffield study of ward design. These have necessarily been experimental and tentative. They have not been taken forward to the development stage, which involves collaboration with the producing industry.

We must now undertake more systematic study of hospital equipment. First, we need to continue studies which have already been begun, from the point of view of the user. At least one full time group pursuing these studies within the hospitals will be needed, if reasonable progress is to be made, and we do need to move fast. Second, we have got to bring the user requirements up against the problems of manufacture. This can only be done by an experimental programme which includes the making and testing of prototypes, and this will be more difficult to organise in view of the dispersed nature of the hospital equipment industry.

It should not be forgotten that architecture and the design of equipment are intimately linked. Any group studying product design will have to keep in step with developing ideas on hospital planning and these ideas are changing fast at the present time. Equally, the establishment of vigorous research into the design of equipment will itself affect our ideas on hospital planning and architecture. Revolutionary new ways of working in hospitals might arise from a study of equipment, and might revolutionise the design of the buildings. Very often equipment and furniture provide the link connecting human use with the size and shape of a room or building, and the more we know about the human use of furniture and equipment, the better our architecture is going to be.

POINTERS

With reference to tests

Questions about functional efficiency have been common to much of the criticism levelled at the CoID during the past six months or so. What in effect the critics have been saying is that, while they are willing to accept the Council's selection policy in so far as it applies to aesthetic matters, they are not at all confident that the functional design of products accepted into 'Design Index' and shown in The Design Centre has been adequately considered. Their attitude shows a proper concern that first things should be put first, but what some critics have failed to mention is that products must first be passed by competent technical assessors before they are accepted into the Index or are put on display.

This shows at least that the CoID is not blind to functional requirements in design, and though full scale laboratory tests of all products in 'Design Index' would be highly desirable, the enormous cost of testing some 10,000 individual items makes the idea impracticable at the present time. But to ensure that the facts are available to the public, those items in the Index which have been tested by various organisations are now being marked, and information concerning the tests is available from the information counter at the Centre.

Critical about-face

The irony of some of this recent criticism will not have been lost to regular readers of DESIGN who will recall that the case for consumer research and product testing was being argued in these pages long before either of the two British consumer organisations were set up and, incidentally, when the most vociferous of the critics was preoccupied with questions of pop art and the badness of good taste. At one time the functional efficiency of products chosen by the CoID seldom caused comment, and it was only the aesthetic decisions that were occasionally thought to be dubious. The current about-face is more healthy since it has the merit of good sense.

More about consumers

Since the article on consumer research in Sweden was published in last month's DESIGN, a new publication has arrived from the Swedish Consumer Institute. This booklet, which is reviewed on page 83 of this issue, reports an investigation among 1,000 households to find out how housewives work and what they find right or wrong with the equipment they use. The need for such impartial research into the way people live was also discussed in last month's leading article, which took up the case argued by Michael Farr at Aspen in 1955 and was subsequently developed in a series of articles on consumer needs* published in 1957.

Read before you buy

Lack of space has precluded earlier mention of a booklet which should be an invaluable guide for anyone anxious to find out more about products before buying. Called *Which Shall I Buy?*,† and compiled and published by Wimbledon Public Library, it is a reference of articles, reports and tests on all sorts of consumer goods published in a wide variety of journals. The booklet is arranged alphabetically under subjects so that if you want to buy a refrigerator, for example, you can immediately see that independent reports on tests have been carried out by *Which?*, *Electrical Review* and DESIGN, that advice in the form of an information sheet is available from Consumer Advisory Council, and that lists of equipment can be obtained from various trade sources. The booklet is intended primarily to show what type of information on matters of interest to consumers is normally available from public libraries. Understandably, the demand for it has been overwhelming, both in this country and abroad.

Function? What's that?

All this talk about the consumer and finding better ways of meeting his real needs can, of course, be very misleading. So accustomed are we nowadays to the idea of functionalism in design that we could be forgiven for imagining that the prime function of a saucepan, for example, is to provide a means of cooking food. A little market research would have shown how wrong we would have been.

Mirroware Ltd is reported to have received an order from an African chieftain for a large consignment of the firm's *Colourama* saucepans, which can be seen in The Design Centre. How splendid that the message of good design has penetrated even to the darkest corners of the African continent. But what the tribesmen really wanted was something to put away as an heirloom or to hang on the wall as decoration. And what better could they have chosen for this particular function than a nice, anodised aluminium saucepan.

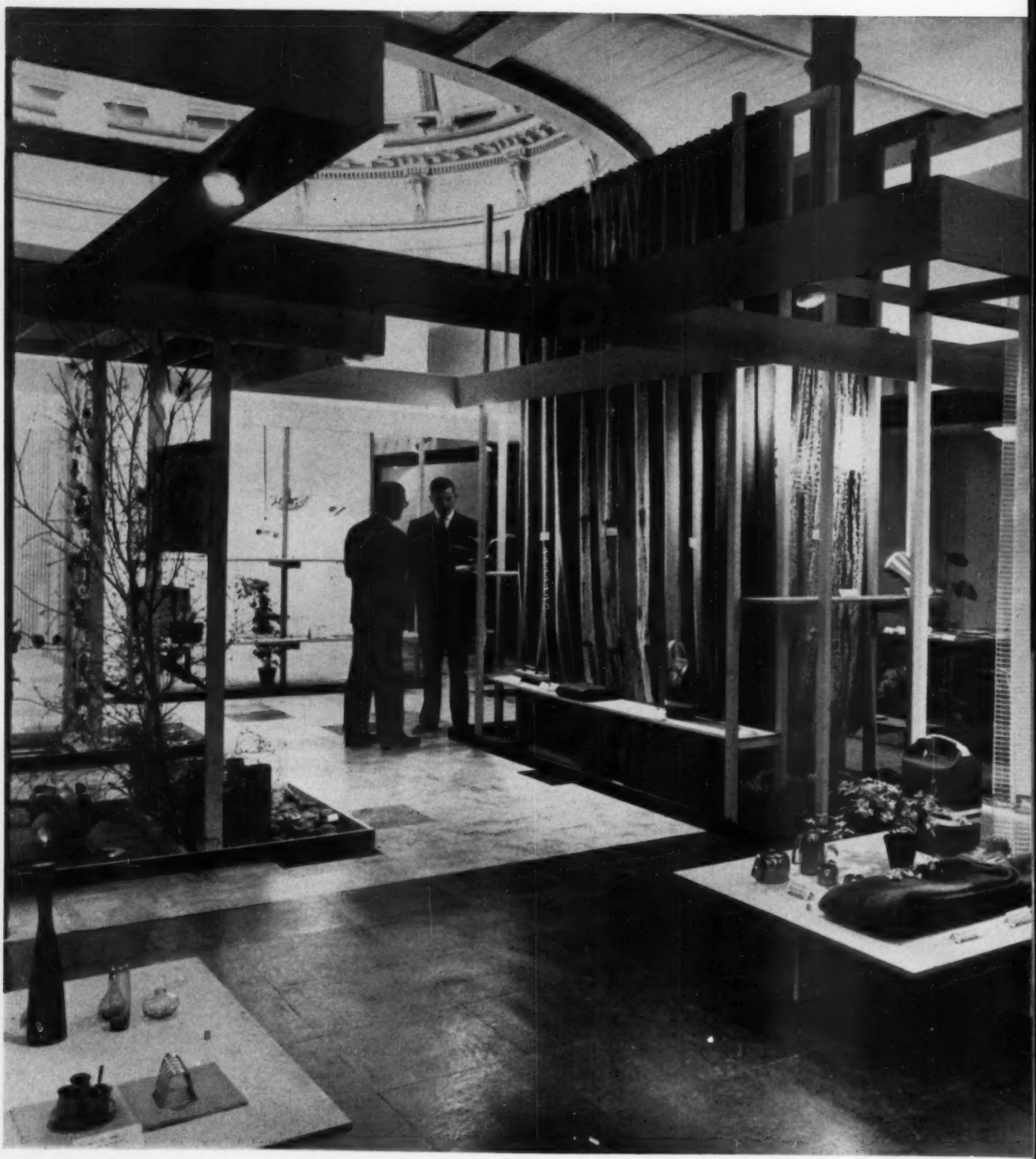
* Michael Farr and Rosetta Desbrow, *Consumer Needs and the Designer*, DESIGN 97/18–20, and subsequent articles.

† *Which Shall I Buy?* Wimbledon Public Library, London SW19. 1s.

Art editor's page

Sunrise on the mist laden heights of the art editor's ancient tweed jacket illuminates Scotland's proudest and most durable consumer product; a possible backdrop for the newly extended Scottish Design Centre.

Part of the main central display area at the Scottish Design Centre.



SCOTTISH CENTRE EXTENDED

The Scottish Design Centre was first opened in Glasgow in 1957, and since then the CoID Scottish Committee has displayed goods accepted for 'Design Index', mostly in the form of specialised displays and room settings.

Its recent extension, however, has doubled the exhibition space available in the West George Street showrooms, so that there will now be about 500 products permanently on display, and these, like the exhibits in the Haymarket Design Centre, will be periodically changed.

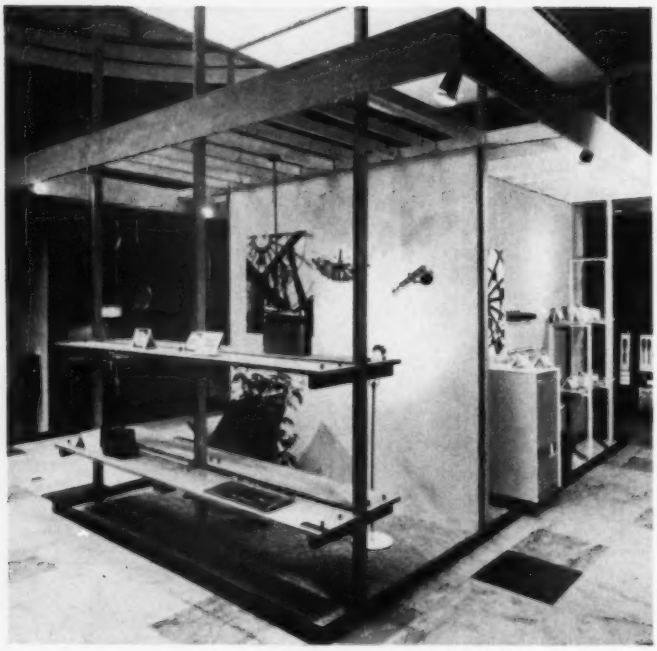
The exhibition, which was opened by Sir Gordon Russell, now takes up two floors. It includes a replica of 'Design Index' (see page 36) as well as a new books and periodicals library which have been installed in what was once a dark and dirty basement store. In the main exhibition area on the ground floor an imposing high ceilinged room has been transformed into an up to date and flexible exhibition area. The framework of the display stands, which are based on a 4 ft module, is in light, natural finished softwood, supporting a pattern of false ceilings in muslin. (In general, however, there has been no attempt to conceal the original ceilings.) Some of the goods are displayed in small room settings, and on demountable shelves.

The architect for the scheme was Baron Bercott & Associates and the main contractor was R. Armour & Partners.

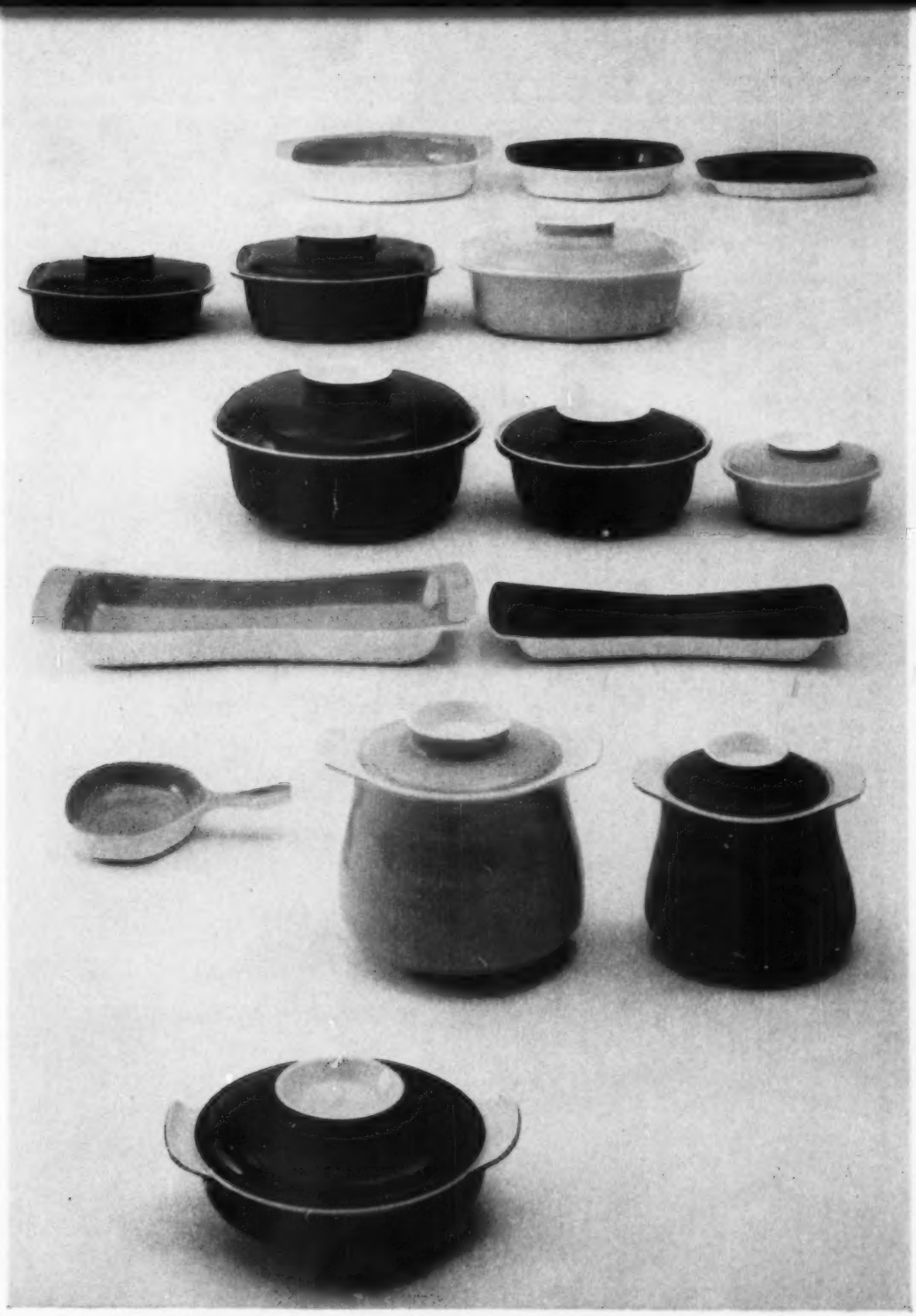
Baron Bercott read architecture at Liverpool University, and formed his own practice in Glasgow in 1951. He has designed several new Scottish schools and is at present working on an office block for the Burgh of Falkirk.

Robert Clark was appointed chief executive, CoID Scottish Committee, in May 1960. He was formerly lecturer in design at Liverpool University.

The Scottish Design Centre now has a replica of the CoID's 'Design Index' – a photographic and sample record of current well designed British products.



This display of the 1961 *Design Centre Awards* was one of the main features at the opening of the new extension.



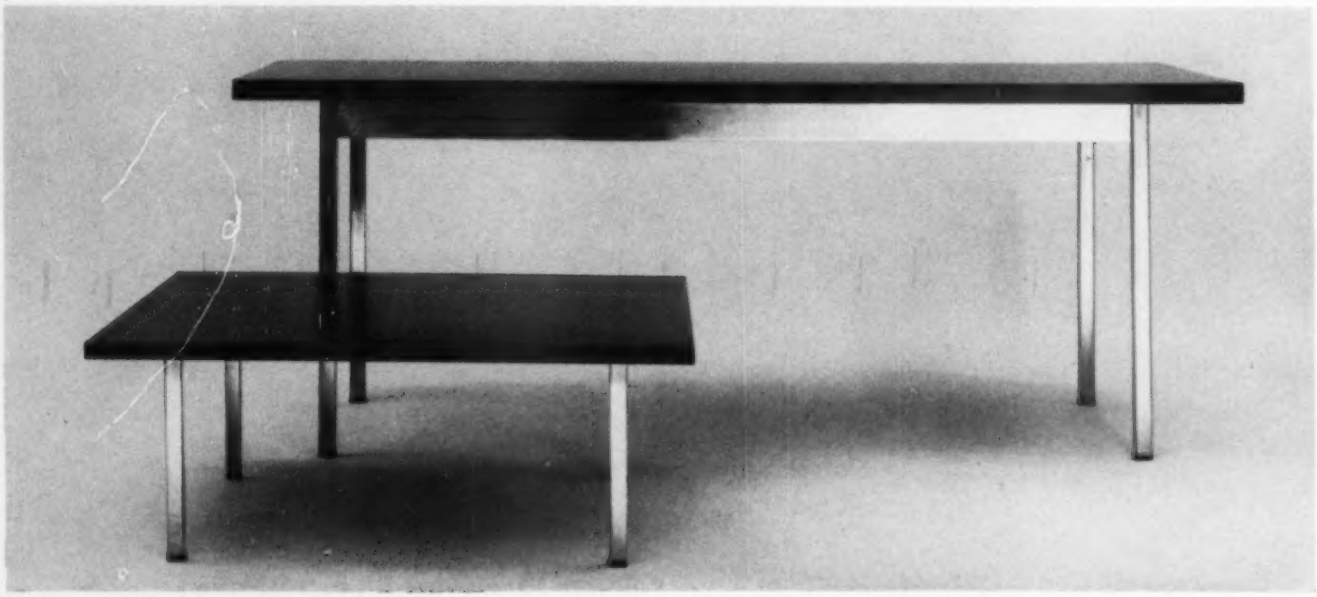
PARADIGM IN POTTERY

Poole Pottery's first major venture since its expansion this year is this range of oven-to-table ware, which achieves distinction by its simple shapes and sensitive colours, as well as by its extreme lightness. The most striking feature of its development is the way in which the shapes have been modified by production and user tests right up to the final stages. Robert Jefferson, the designer, had run a small pottery firm, and had also spent some time as lecturer in ceramics at Stoke-on-Trent School of Art before becoming Poole's resident designer some three years ago; despite this, he did not bring preconceived ideas to the design of the range. The flowing shapes, for instance, were partly dictated by the weakness which sharp corners show when exposed to heat in both factory firing and domestic use; and the organic nature of the handling areas is conditioned by two years of tests in a considerable number and variety of homes, as well as by the same need for robust shapes during production. The range consequently exhibits no sense of styling, but is a paradigm of the design process based on a functional approach. Prices range from 6s 11d to £2 4s. D.C.

REVIEW OF CURRENT DESIGN

A selection of items recently accepted for 'Design Index', the CoID's photographic and sample record of current well designed British goods. 'Design Index' forms an essential part of The Design Centre, 28 Haymarket, SW1, which is open on week days from 9.30 am – 5.30 pm, and on each Wednesday and Thursday until 9 pm.

1



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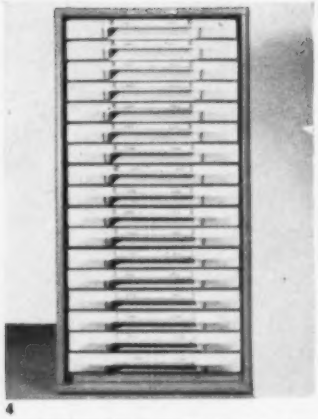

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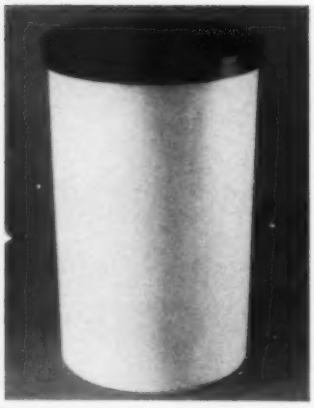

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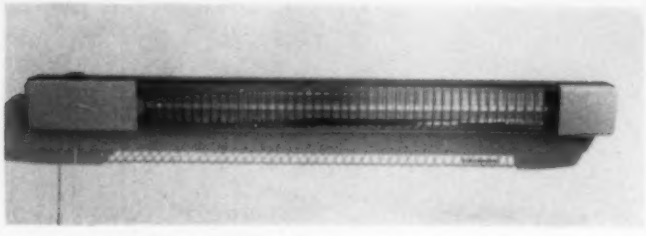

1 Occasional and conference tables (models *Design L*), with top of wax polished Bombay rosewood on satin finished chromium plated metal frame. Knocks down for packing. Occasional table 36 × 36 × 14 inches high. Conference table 32 × 72 × 28 inches high. DESIGNER *Keith Tuckey*. MAKER *Catesby's Contracts & Export Ltd. £24 (occasional table). £79 10s (conference table).*

2 Zip case (model *Wraith ZP 531/PC*) with special bonded laminated frame, covered with heavy gauge PVC. Claimed to be strong and light in weight. Length 24¼ inches; width 19½ inches; depth 7 inches. MAKER *S. Noton Ltd. £7.*

3 Visible record cabinet (model *Kardex Aristocrat KAC 1285*). Cabinet and trays of coated steel, stove enamelled in grey. Record cards are visibly indexed, and may be referred to and used without removal from trays. Height 15⅞ inches; width 10⅞ inches; depth 25 inches. MAKER *Remington Rand Ltd. £58 15s 5d.*

4 Wall mounted infra red heater (model *IRA*). Switch cord can be positioned at either end. Finished off white. Length 33½ inches. MAKER *Morphy-Richards (Cray) Ltd. £4 19s 6d.*

5 Linen bin/stool in laminated, resin bonded birch, with white cellulose finish. Top in black or white plastics, or with cork inlay. Height 17¼ inches; diameter 12 inches (at top). DESIGNER *B. Smith*. MAKER *Ekco Plastics Ltd. From £2 8s 6d.*

6 Long handled pruner (model *W421*) with rubber grips and rust resisting blade. Handles maroon sprayed. MAKER *Wilkinson Sword Ltd. £2 10s.*

7 Coffee set of stoneware with black glaze inside cup, white glaze outside. Also available with inside of stone colour. MAKER *A. & R. Duckworth Ltd. £9 15s.*

8 Portable fan heater (model *Bermuda BMD*) of mild sheet steel, bonderised and stove enamelled. Aluminium fan, plastics handle. Fan can be used without heating element. Body finished in charcoal or bronze, front and rear grilles off white, diaphragm red. AC only. Height 12½ inches; depth 7 inches; width 13¾ inches. MAKER *Morphy-Richards (Cray) Ltd. £8 18s 6d.*

9 Upholstered easy chair (model *Fulmar*). Birch frame, with upholstery of rubberised hair and polyether on patent steel springing. MAKER *Furniwood Productions Ltd. From £33 12s 6d (according to cover).*

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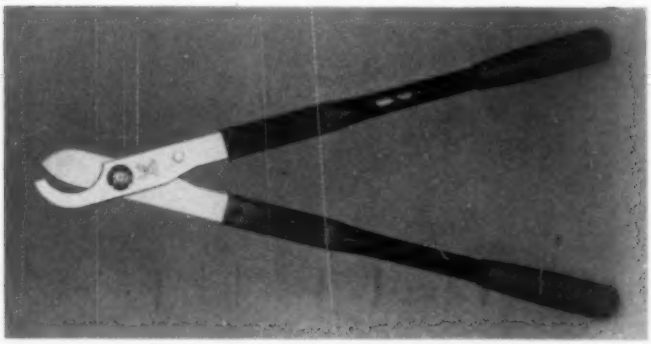

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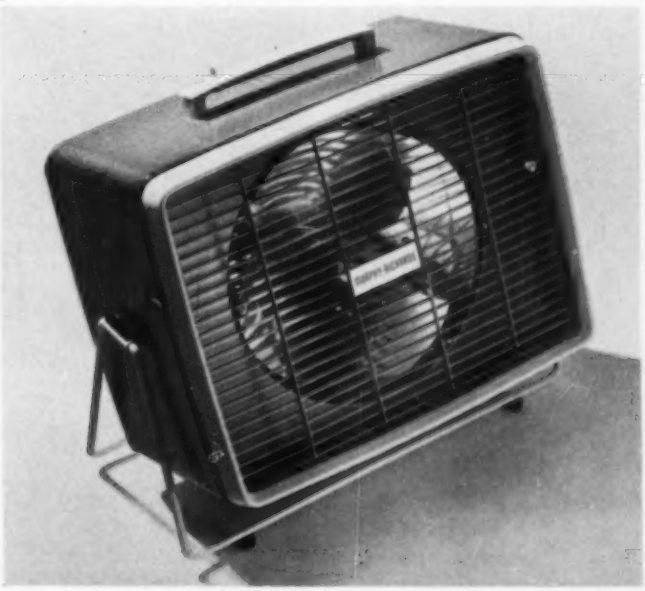

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10 Pendant lighting fitting (model *107*) in break resistant acrylic sheet, with brass fittings. Ceiling canopy of white plastics or brass is available. Polished finish in white or red. For use with 40W bulb. Height 8¾ inches; diameter 5¾ inches. DESIGNER *Yki Nummi*. A Finnish design made under licence in U K. MAKER *X-lon Products*. *£5 5s (brass ceiling canopy 15s extra)*.

11 Self starting electric wall clock (model *Executive 10*) with flush fitting outer case of black plastics; white glass dial with black numerals or vice versa. Diameter 10 inches. DESIGNERS *Design and Industrial Styling Co Ltd, in conjunction with maker's design staff*. MAKER *Westclox Ltd. £6 10s*.

12 Collar box (model *7539/7*), hand finished in pigskin or Luxan hide. Available in tan or black. Height 2¾ inches; diameter 7 inches. MAKER *Fine English Leatherware Ltd. £5 12s (Luxan); £6 7s (pigskin)*.

13 Wilton body carpet (model *Super Veltone 40/1322*) of wool pile. Width 27 inches. DESIGNER *John Bridger*. MAKER *The Empire Carpet Co Ltd. Price from maker*.

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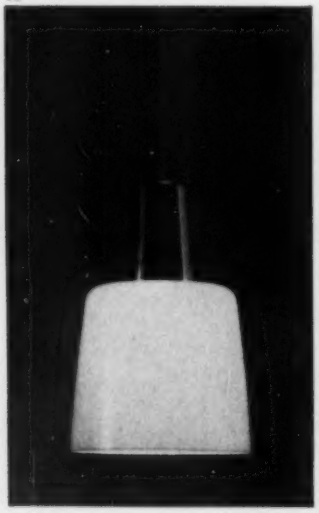

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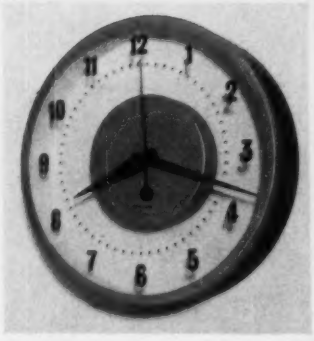

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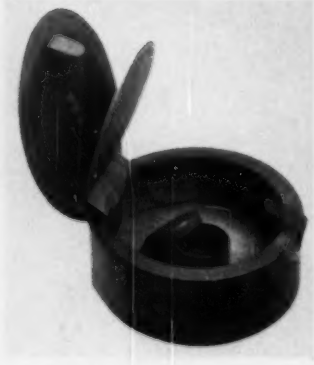

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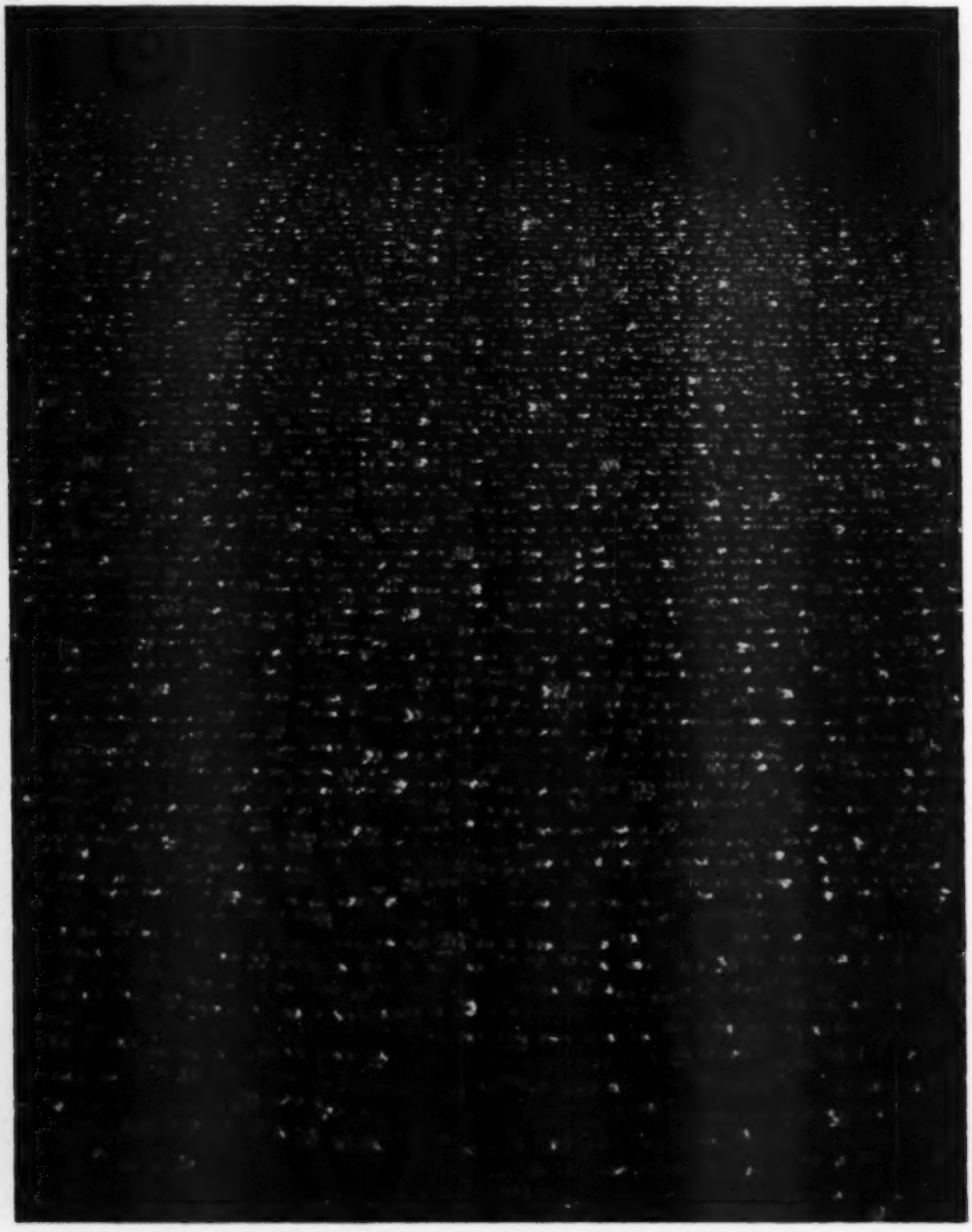

14 Cutlery and flatware (model *New Image*) in stainless steel; satin matt finish with black nylon handles. Handles are claimed not to scratch or loosen, and to be unaffected by boiling water, detergents or food acids. DESIGNER *C. Melville Cass.* MAKER *John Sanderson & Son (1929) Ltd. £3 14s (six-place setting).*

15 Handmade stoneware five sided bottle, with applied decoration. Similar but not identical pieces available. Height 17½ inches. MAKER *Ian Auld. £5 5s (pot); £9 9s (bottle).*

16 Personnel call system (model *Mark II*). Control case in aluminium and PVC; sides and receiver case in light or medium grey high impact polystyrene. Top finished in grey; panel in satin aluminium; red letters. Any member of staff on premises may be located by means of small, battery powered receivers; can be controlled from several locations; speech messages can be relayed. System can be extended to call up 120 persons, with additional capacity to special order. Height of control 3¼ inches; depth 12 inches; width 11¼ inches. Receiver may be carried in breast pocket. DESIGNER *Martyn Rowlands.* MAKER *Westrex Co Ltd. From £95 (16 receiver system controller, calling only); receiver £21 (calling only) or £23 (speech).*

17 Dressing table and stool, and three drawer chest (models *Langden*). Available in teak and afrormosia, mahogany and rosewood, or French walnut and African walnut. Height of dressing table 25½ inches; depth 18 inches; width 63 inches (also available in 45 inch width). Height of chest 25½ inches; depth 18 inches; width 39 inches. DESIGNER *Robert Heritage.* MAKER *Archie Shine Ltd. £30 16s 6d (5 ft 3 inch dressing table); £25 15s 3d (3 ft 9 inch dressing table); £24 9s 9d (chest); £8 5s (stool).*

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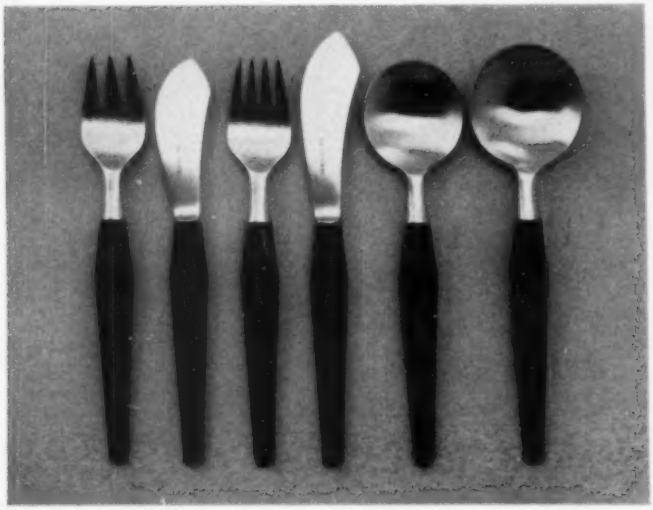

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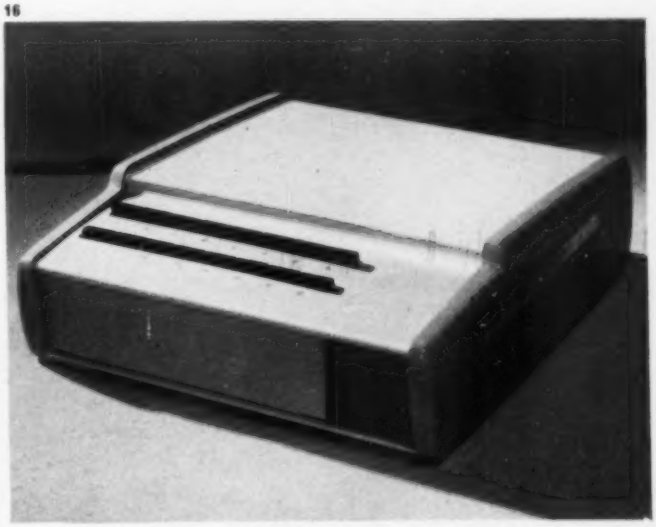

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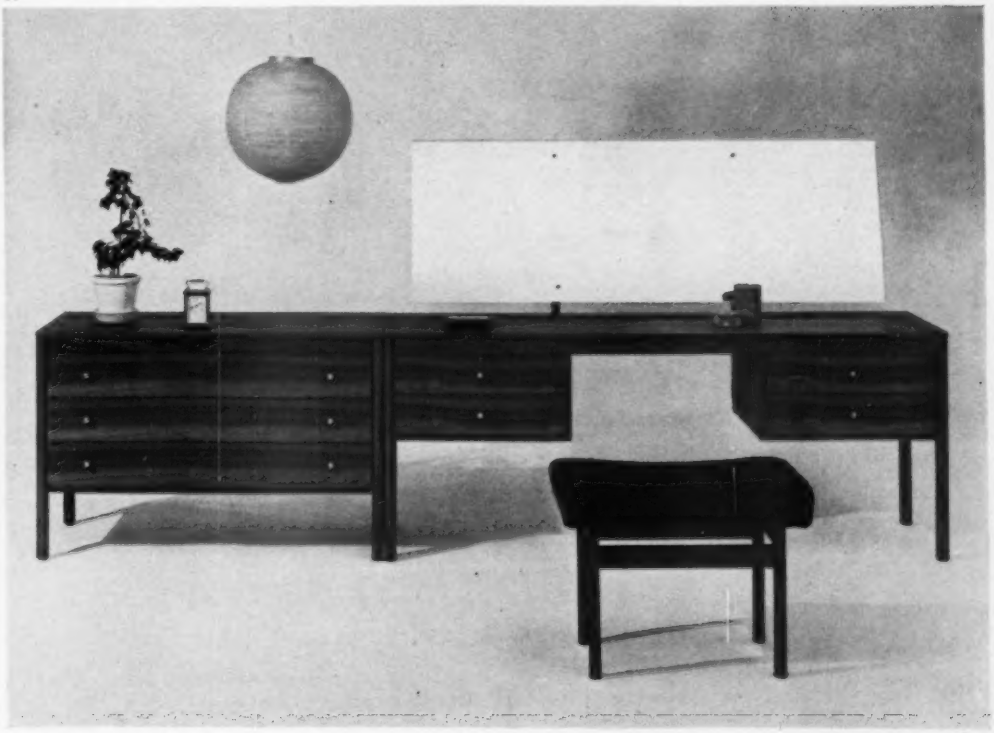
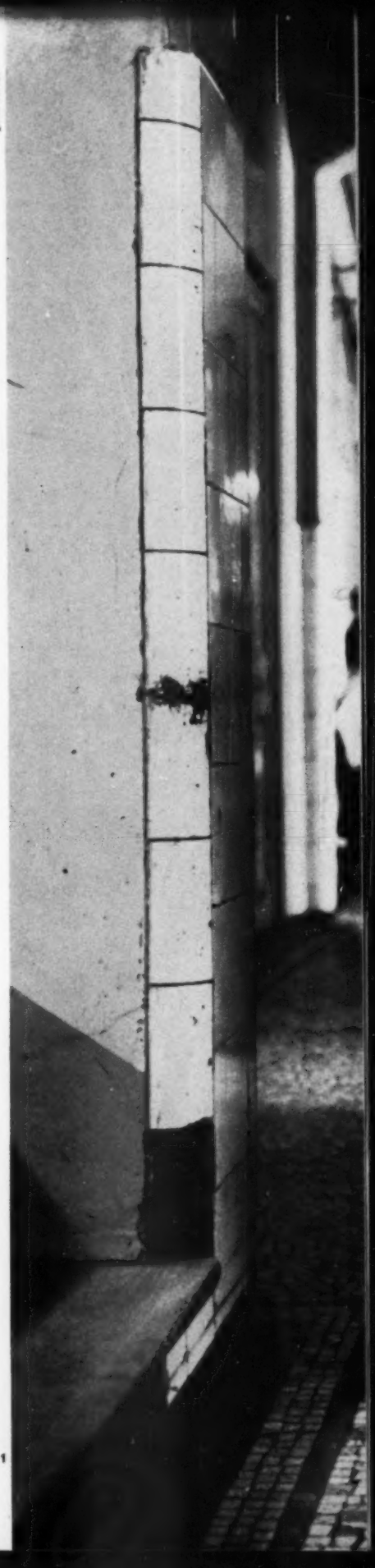


HOSPITALS

PART ONE OF A NEW SERIES

ARCHIE MCNAB



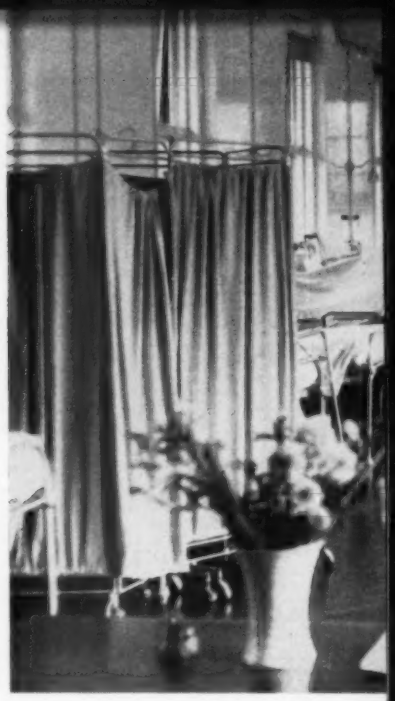
John Garner

1

This first article in a series on design in hospitals discusses the implications of the Ministry of Health's new building programme. It suggests that a comprehensive system for research is urgently needed if a more efficient and humane service is to be achieved – an argument reinforced by R. Llewelyn Davies on page 31.

The second article will put forward the case for systems of centralised supply and bulk purchase, and the third and further articles will discuss the problem of equipment design in the context of the hospital environment. Finally, possible lines of research into ergonomics and other user requirements will be suggested.

HOSPITALS



2 There tends to be little privacy in traditional 'Nightingale' wards. These can have a barrack like appearance, and are generally overcrowded. They are not necessarily easy to supervise, and are far from the Nuffield ideal of clearly defined areas within a single unit for treatment, rest, convalescence and administration.

Significant and far-reaching changes in medical practice and major developments in drugs and techniques of treatment – changes which incidentally are virtually continuous – have since the war created a situation which has rendered the majority of our existing hospitals out of date. (An example of this process may be seen in the encouragement of hospitals, as medical policy, to include mental health patients within the general hospital framework; and these patients take almost half the number of all beds available for all diseases.) Research into hospital needs has barely kept pace with these rapid developments, and has gone on spasmodically over many years without any particular sense of urgency. Some preliminary work was carried out before the war by the King Edward's Hospitals Fund for London, but it was only with the establishment in 1949 of the Nuffield Provincial Hospitals Trust's hospital research project that intensive study was begun into future requirements. Now, of course, hospital building is news and the whole problem has been given a well deserved shot in the arm by the Minister of Health's belated decision to make £500 million available for capital development over the next 10 years. This sum is still regarded as niggardly and there is a feeling that "the hospital service is still far nearer the back than the front of the national building queue".[1] The point is that there is a great deal of leeway to make up in bringing the *hospital environment* into line with purely medical achievement.

However welcome this money is, there is a danger that the hospital programme might be initiated with too much haste; for despite the work of the Nuffield Trust and the Ministry of Health, too little is known about user requirements in hospitals to ensure that new building will prove entirely satisfactory. It has been estimated that it takes 10 years to carry through the design of a hospital from drawing board to completion, in which time there will have been many more, perhaps radical, changes in medical technique, and the completed building may well be a clumsy and inadequate anachronism. If, in addition, the original brief to the architect is 10 years out of date, the result could be disastrous.

It is obviously important therefore that basic information resulting from research on user and technical requirements should be fully codified and published. So far the design of post-war hospitals which have attempted to break away from traditional ideas of organisation has been inspired by the impetus of Paul Nelson's hospital at St Lô and by the Nuffield experimental units at Larkfield Hospital, Greenock and Musgrave Park Hospital, Belfast. The report of the Nuffield team[2] has, since 1956, been the basis for all positive architectural thinking on the subject. The Nuffield Division for Architectural Studies, however, dealt mainly with the overall planning principles involved in the design of a complex building, and very little was done in studying the actual equipment of the hospital. (Swedish and US research bodies have taken this aspect of hospital design a little further. For example, the US Department of Health, Education and Welfare publishes guides to the purchase and selection of hospital equipment and constantly brings them up to date.) In this country, however, although work studies have been made in such departments as casualty, and considerable work carried out in relation to lighting and colour, the design of the internal environment in general, and particularly of individual items of equipment such as beds and semi-clinical furniture, has been largely a matter of hit-and-miss ergonomics.

Mechanisation and automation

Two most important innovations are likely to change the pattern of hospital design and organisation. The first includes the mechanisation of internal hospital transport, such as supplies, and the development of automatic communication. This suggests the introduction of automated processes, and the logical extension of these to information processing (machine controlling machine),

Photographs **1**, **2**, **3** *and* **4** *by John Garner*; **7** Nursing Mirror; **8** *and* **11** Architects Journal; **9** *and* **10** *de Burgh Galwey*

planned communication, mobility, etc, will mean an increase in personal service to the patient. There will also be less likelihood of skilled staff doing the unskilled jobs that can be better done by machine. These developments will have a profound effect on nursing, and on the number of staff (particularly unskilled) and equipment required at the point of use. It will be more than an assembly line arrangement, already partly established and in any case not really automation, but an ideal 'factory' process in terms of services and supplies, with the vital corollary that the patient retains his position as the focus of the hospital organisation.

Articles on this subject have already been published,[2] and it has been suggested that automation of hospital services might be applied to supply, communications and food handling. But John Weeks has also pointed out that the techniques of automation already operative in the States might not be easily incorporated into the British system, largely because of long established or traditional hospital methods. But the processing and despatch of supplies, sterile material, pharmaceutical items, etc, if not of food, must inevitably be developed in this country.

Disposable goods

The second development that will profoundly influence hospital planning is the increased use of disposable equipment which, in theory at least, makes for convenience, economy and sterility. Again the implications for design and organisation are considerable, for the normal cycle of cleaning, packing and sterilising can be eliminated from the hospital routine. The manufacturer as supplier is able to carry out jobs which in the hospital itself are dear in staff and provide added hazards in combating cross-infection. There are disadvantages, for despite a possible reduction in staff, the adoption of such a system in a hospital already committed to a capital investment in, say, laundry machinery would be difficult. There are too the problems of actual disposal, for the use of these goods (which range from dressings, packs, cups to syringes and enemas) would increase the volume of waste by vast quantities, and might call for expensive means of incineration. The adoption of disposable items on a large scale would call for greater centralisation of the sources of supplies, and in the case of bulky, heavily used items such as bedpans, uniforms, etc, there would be special storage and replenishment problems. In other words, it means the establishment of a bulk purchasing system such as hospitals do not at present fully accept. The idea of disposable goods is, however, more widely accepted in both the US and Sweden where experiments with such items as sheets, uniforms and gowns are being carried out. With qualitative improvement the system becomes of vital importance.

The introduction of both automation and disposables on a large scale is of course a gradual and long-term process. In the meantime there is still the problem of today and the immediate future. Hospital equipment must always be adapted or replaced, old buildings must be brought up to standard and the designer of new hospitals given some criteria to work to. One answer is to take to the next stage the work begun by the Nuffield team – to find out rationally what is required of equipment in hospitals. Given the rapidity of medical change, it may be that the hospital building will soon be treated as a decked shell, like a ship's hull, into which is placed clinical and other equipment appropriate to departments which are themselves flexibly planned to meet rapid change. On such a basis equipment could then be considered at a later stage than would otherwise be essential. But both the building and its equipment must be based on "as accurate an assessment as possible of future needs for hospital care in its various forms".[1] Hospital design should not follow a rigid universal pattern – modular treatment is probably not flexible enough, as hospitals are one-off buildings – but some degree of standardisation is essential in both design and costing if the whole complex problem of

HOSPITALS

3 Careful planning in the early stages of designing a hospital could eliminate scenes like this where a casualty is brought in through the out-patients' waiting area. The herding together of the sick and the healthy often contributes to the traditional morbid fear of hospitals.

hospital building is to be resolved, and a more economical use of technical resources and nursing staff achieved. This will in fact revolve on two important factors.

Environment

Firstly there is the problem of environment and the humanisation of the hospital; the importance of atmosphere to both patients and visitors and in the long run to nursing staff is now recognised. As a contributor wrote in *The Spectator* recently, "a great responsibility rests on members of the hospital committees . . . to see that their hospital caters for the emotional needs of the patients no less than their physical care". Lip service has always been paid of course to this in the phrase "the hospital exists for the patient". But the creation of a suitable environment is not merely a matter of potted plants and pretty décor, and must surely have some basis in scientific analysis, if it is to be part of the process of therapeutic care. It is important to avoid the cheap-jack psychology which relies on a few rules about interior decoration and the use of bright colours. The problem is partly a matter of basic planning and organisation; for example, the adoption of group nursing as opposed to job assignment, or the system of consultation in the out-patients' department; and it is partly a matter of detailed planning, such as the reduction of ceiling heights as at Swindon and Londonderry, or the use of a carpet in a main entrance hall. Colour, daylighting and artificial lighting overlap to a great extent with basic planning (the Nuffield report goes into this problem in some detail). Some aspects of physical planning are of course dependent on medical requirements, and controversy still rages on the design of wards; opinion is by no means unanimous on the subject of the 'Nightingale' ward, **2**, although the Ministry of Health has now made firm recommendations on the subject.[4] The ward, which is the most important area of patient accommodation, must certainly break away from tradition if efficiency is to increase. The adoption of a 'race-track' layout (with wards and ancillaries situated round a central service core) seems outstanding among recent suggested solutions.

The design of individual items of equipment contributes in no less degree to efficiency and environment, and it is here that there is infinite scope for research. In the third article in this series a number of suggestions will be made for the design of certain basic items in this category, and many designs now available to the hospital service will be reviewed. At present no information exists which gives a guide to selection for the various purposes within the hospital. There are however definite categories of equipment that can be divided as follows: (1) equipment that is built in as part of the main contract, (2) equipment with a life of five years or more, and (3) equipment that has a life of less than five years.[5] Many designs included in the last two categories come within the range of normal domestic furniture, much of which is suited to hospital use (ie in reception areas, day rooms, etc). Obviously, certain items require modification, and others are peculiar to hospitals. The most obvious item in this category is the ward bed. At present these, like many other clinical and semi-clinical products, are supplied by a small but highly sectionalised industry. Each firm has its own conception of the design, based on the preferred requirements of individual hospitals or even individual medical specialists. There are a few basic points which are or should be common to most beds: adjustable height, say between 18 inches and 28 inches,[5] raisable foot, detachable head and either a manual or electric brake; but beyond these generalisations little anthropometric information exists. Most hospital authorities are reduced to selection on the basis of the views expressed by the matron and nurses, in a process of trial and error; they after all are the ones who have to make the bed, move the patient and so on. The ward bed is merely one of the many examples and the list must include wash basins, sterilisers and all working surfaces (most desks in

4 Conditions in the service departments of old hospitals are often appalling; this kitchen of a hospital in the London area is typical of many.

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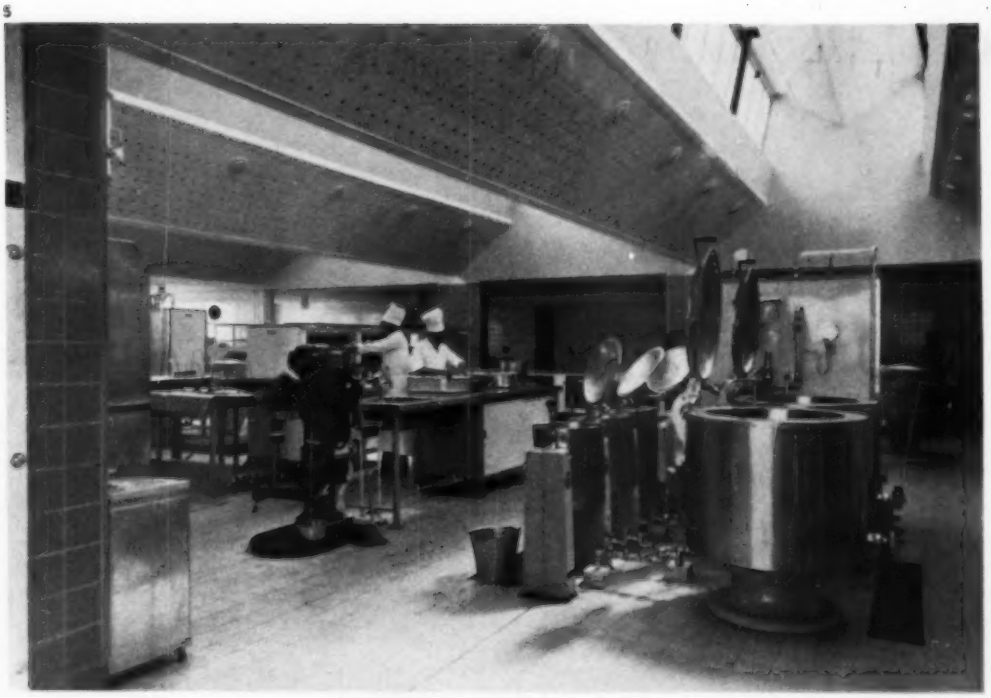

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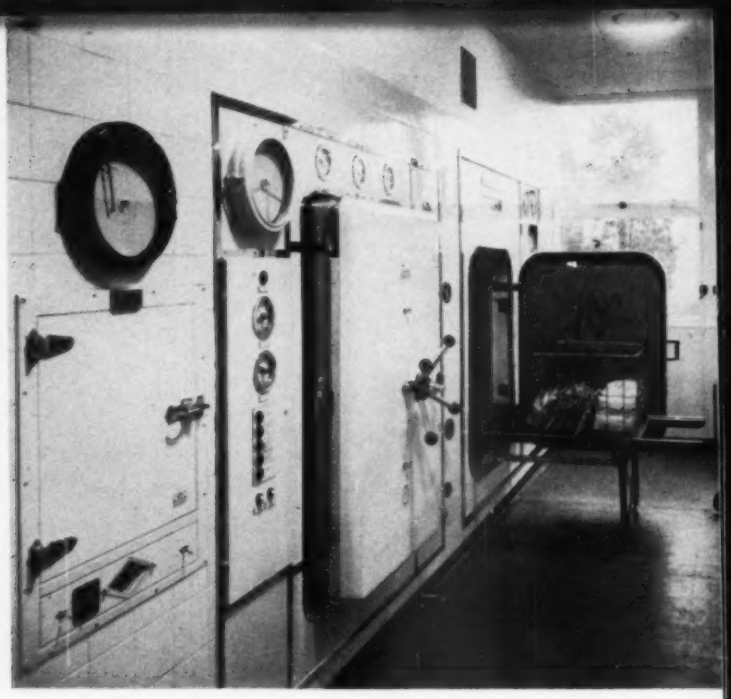
5 and **6** Kitchens in new hospitals are organised and equipped on a semi-scientific basis. The illustration, **5**, shows the kitchen in Altnagelvin hospital, Londonderry, **6**, which was opened in 1960. The layout, colour and lighting have all been well considered; however the solution to the problem of the distribution of food to the ward units (by heated trolley over fairly long distances) is not entirely satisfactory. ARCHITECTS *Yorke, Rosenberg and Mardall.*

HOSPITALS



hospitals are still accepted at a height of 30 inches).

The variety of equipment on the market has probably grown through the traditionally independent buying policies of individual hospitals and this is possibly the crux of the whole problem of equipment design. It is difficult to decide exactly who is the client, even if the user is fairly obvious. The Minister of Health is answerable on all questions of administration of the hospital service and is therefore the client in so far as he is responsible for finance. The regional boards and boards of governors of individual hospitals control the actual building programme, but the local management committee is far more likely to decide on the supply of equipment to its hospital. At present there is no firm buying policy; the ministry may purchase centrally or purchasing may devolve exclusively on the local hospital. Between the two there is a variety of joint purchasing schemes. It would seem to be more logical, at first glance, to establish a centralised system in which the ministry is the main purchasing agency. This would ensure greater economy in the service and, it is to be hoped at any rate, greater efficiency and a higher standard of design.

Add to all this the variable problem of the preconceptions of doctors and matrons and the difficulty of forecasting hospital requirements, and the case for standardisation becomes formidable, as indeed do the obstacles confronting any such aim. For example, the lack of criteria on the design of hospital beds also applies to most other items of equipment, as well as to the special problems of the clinical departments and essential services like catering, supply, laundry and engineers' departments.

The remaining articles in this series will deal broadly with these problems and particularly with the case for establishing a system for centralised supply and bulk purchase.

[1] *The Hospitals Yearbook 1961*, Institute of Hospital Administrators, 75 Portland Place, w1.
[2] *Studies in the Function and Design of Hospitals*, 1955, Nuffield Provincial Hospital Trust and University of Bristol, OUP, £3 3s.
[3] *Mechanisation and Hospital Design*, edited by John Weeks, *Architectural Design*, January 1961.
[4] *Hospital Building Note No. 4: Ward Units*, 1961, Ministry of Health, 1s 6d.
[5] *Commissioning a New Hospital*, 1961, Oxford Regional Hospital Board, 43 Banbury Road, Oxford.

8

9

8-11 The architects of the new *Princess Margaret* hospital which is now being built in Swindon have incorporated Nuffield research recommendations in the design and layout of the temporary ward unit, **9** and **11**. The central reception area, **8**, is spacious, comfortable and well planned. ARCHITECTS *Powell and Moya*.

7 The increased use of centralised supply departments is inevitable. These units provide economies in staff and time, as well as increasing the efficiency of such functions as the sterilising process. The illustration shows part of the CSSD (Central Sterile Supply Department) in a ward block at Musgrave Park Hospital, Belfast, designed by the Nuffield Provincial Hospitals Trust.

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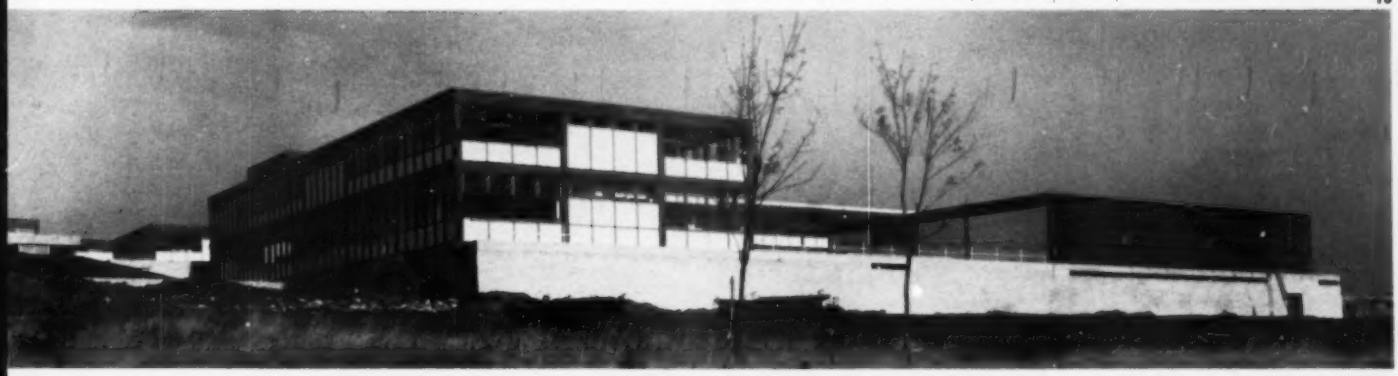

11

Furniture for the ranks

A. IVAN NELLIST

A modest but interesting exhibition was recently held against the sombre background of the War Office. It consisted of a living/dining room and a bedroom showing new furniture designed for other ranks married quarters – the first of several groups of furnishings to be produced for various ranks and situations.

The simplicity of the furniture is deceptive and hides a great deal of thought, research and winnowing of ideas. Produced for the War Office by the Ministry of Works, Supplies Division, as a result of joint work at committee level, and with the advice of the CoID, it is an example of successful team work in the designer-client field. Design work began in November of last year, and it is expected that the first of the new furniture will be in use early in 1962.

This furniture is in keeping with the aims of the new army in which the soldier is treated as an individual with tastes and ideas of his own and an interest in good surroundings. Now that the recently created Directorate of Works, War Department, has taken over the design of buildings from the Royal Engineers, architects and designers are creating new buildings for the army that are in line with the best architectural standards of today, as well as furnishings in keeping with these surroundings.

The War Office and the Ministry of Works have their own special problems and the design brief was an exacting one. There was a need for economy and therefore simplicity; the furniture had to be strong and easy to maintain, designed to last for 15 to 20 years without its appearance becoming 'dated'; and suitable for easy production by the largest possible range of manufacturing firms.

In addition the designers have taken into account the realities of life. The two armchairs have arms and backs of differing heights relative to leisure occupations such as knitting and reading the newspaper; the dining chairs are comfortable and sturdy; the dining table has a centre folding leaf and a dressing table is provided for the first time.

Families will have a choice of seven fabrics for curtains and also a choice of carpets and upholstery. It is a pity that some of the smaller household objects will still have a chance to spoil the effect but these are now under review.

The new furniture is infinitely more human and attractive than the clumsy four-square Dickensian contrivances which it replaces.

The project has proved that cheap, simple, mass produced furniture can be effective and hardwearing. These designs will be partof the future surroundings of large numbers of people and the results on the nation's design outlook can be far reaching.

The furniture was designed by Geoffrey Young, design officer, Ministry of Works, and James H. Leat, superintending technical officer in charge of production and design.

1 A room setting in the recent exhibition of new furniture for the army.
2 Examples of furniture previously standardized for the army.
3 Occasional table in African mahogany. This replaces the table shown in **2**.
4 Unit chair which can be used separately or placed alongside another to form a settee. Square tubular metal frames support plywood seat and back, which are upholstered in plastics foam. Covers are removable.
5 Dressing table and stool. African mahogany is again used, with the table top in laminated plastics. This design has no direct predecessor. The drawer chest and mirror in **2** served as a dressing table. A new version of this also exists.
6 The new dining chair has a seat height of 17 inches.
7 Armchair upholstered with plastics foam on springs with a hardwood framework. The covers are removable. This chair, for the man, has a higher back and arms than a similar woman's chair. It replaces the chair shown in **2**.

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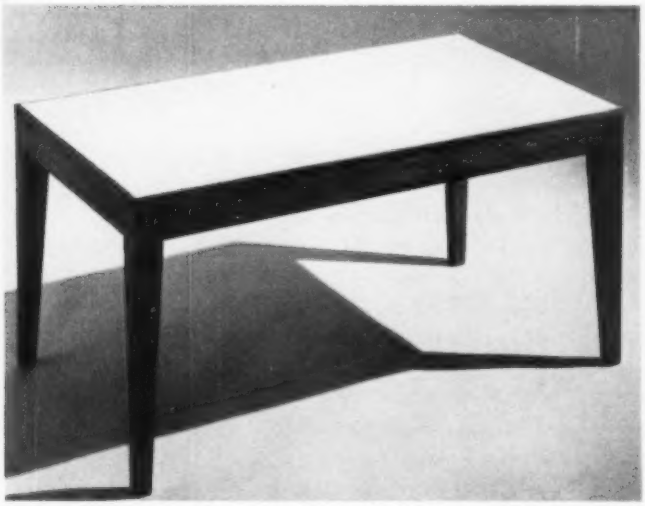

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Photographs for the Ministry of Works by Gordon McLeish & Associates.

product development no. 3

What are the factors contributing to the success of a well designed product?
How was the design process co-ordinated?
Can rapid market acceptance be put down to luck or careful planning?
These are some of the questions discussed in this development history of an

OIL-FIRED BOILER

ANTHONY GOSS

The Englishman's attitude to heating his home is one of those things that other races regard with some amazement. Only in the last decade or so has any notice been taken of pleas for better insulation and higher heating standards. Central heating is still regarded by most of us as a luxury. Any manufacturer who can market a really economical central heating system for the smaller house may well start a new trend in the British way of life. This is what the *Centramatic 35* oil-fired boiler sets out to do.

About eight miles outside Sheffield is an industrial complex of different factories and industries, forming the firm of Newton, Chambers & Co Ltd. The firm has been there for over 160 years; starting at the onset of the industrial revolution with an iron works, it has gradually gathered a wide variety of enterprises and now employs some 5,000 people. Although Newton, Chambers has produced domestic heating appliances for many years under the trade name of Redfyre, it was not until 1955 that the company became interested in oil-fired boilers.

At first, the group imported an oil-fired space heater from Belgium, but it had a poor market reception. While naturally disappointed by this tentative venture, the firm believed that to be acceptable a design for the domestic market would have to *look* as though it were intended for the home. And this feeling became stronger even though the company went ahead with a boiler that could be fitted in a cupboard, **1**.

A year later, in 1956, Brian Asquith joined the Redfyre group as consultant designer and it was his close association with M. A. Hetherington, Redfyre's design and development engineer, that led to the concept of the *Centramatic* range. The first of the products resulting from this team effort was the *Centramatic 50*, **2**, having a thermal capacity of 50,000 Btu per hour – sufficient to supply hot water and six to eight radiators.

Design brief

The aim of this new series of designs was to overcome one of the major difficulties of domestic central heating installations: the complex assembly and fiddling adjustments often required in the home by the installation engineer. The *Centramatic* concept is to transfer the bulk of the technical expertise from the domestic site to the factory, so that a boiler is delivered to the house pre-adjusted and requiring only to be connected up to operate automatically.

The continued market success of the *Centramatic 50* is indicative of the careful consideration of this concept, and it encouraged the manufacturer to take the next step of designing an oil-fired boiler for the small house. The giant oil companies were at that time making significant efforts to capture a large domestic market for oil-fired equipment. They were of the opinion, based on their market research, that there was a substantial market for a smaller oil-fired boiler, and this confirmed Redfyre's view based on general market experience. The *Centramatic 35*, **3**, is Redfyre's answer to this estimated demand, an automatic boiler with a rating of 35,000 Btu per hour capable of supplying the small house with hot water, and heating about four or five radiators.

Technical innovation

The *Centramatic* boilers are based on a careful consideration of the efficiency of the oil burning system. A sectional diagram through the *35* model, **4**, shows the main features of the design. Oil is fed by gravity into the burner and ignited. Air is drawn into a chamber and pressurised by a fan, entering the burner through its perforated sides. The forced draught causes hot gases to be pressed into intimate contact with the sides of the water tubes as well as preventing downdraughts. Thus the heated water circulates either by convection or pumped flow, to the radiators and hot water storage cylinder.

An important technical innovation involved in the *Centramatic* boilers is the pre-packaged automatic control system. This is to be found in the *Centramatic 50* but was further developed and refined for the *35*. The whole control system is designed as a self-contained sealed unit, **5**. The mechanism, incorporated in the sealed box, consists of a synchronous electric motor coupled to a gear box which drives a shaft on which timing cams are positioned. Timing cams in turn operate the various components of the boiler – a fan, oil solenoid valves, etc – in a predetermined operational sequence.

It is essential both for safety and for automatic operation that, once set in motion, the operational sequence should be carried

1 An early post-war boiler, designed by the company to fit a narrow cupboard.
2 The *Centramatic 50*, the first of the new boilers designed to look in place in the home.
3 Developed from the *50* model, but for the smaller house, the *Centramatic 35* is sized 36 × 22 × 18 inches. It costs *£89*.

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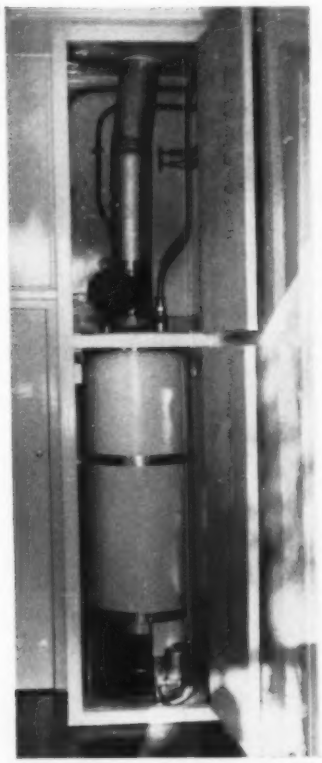

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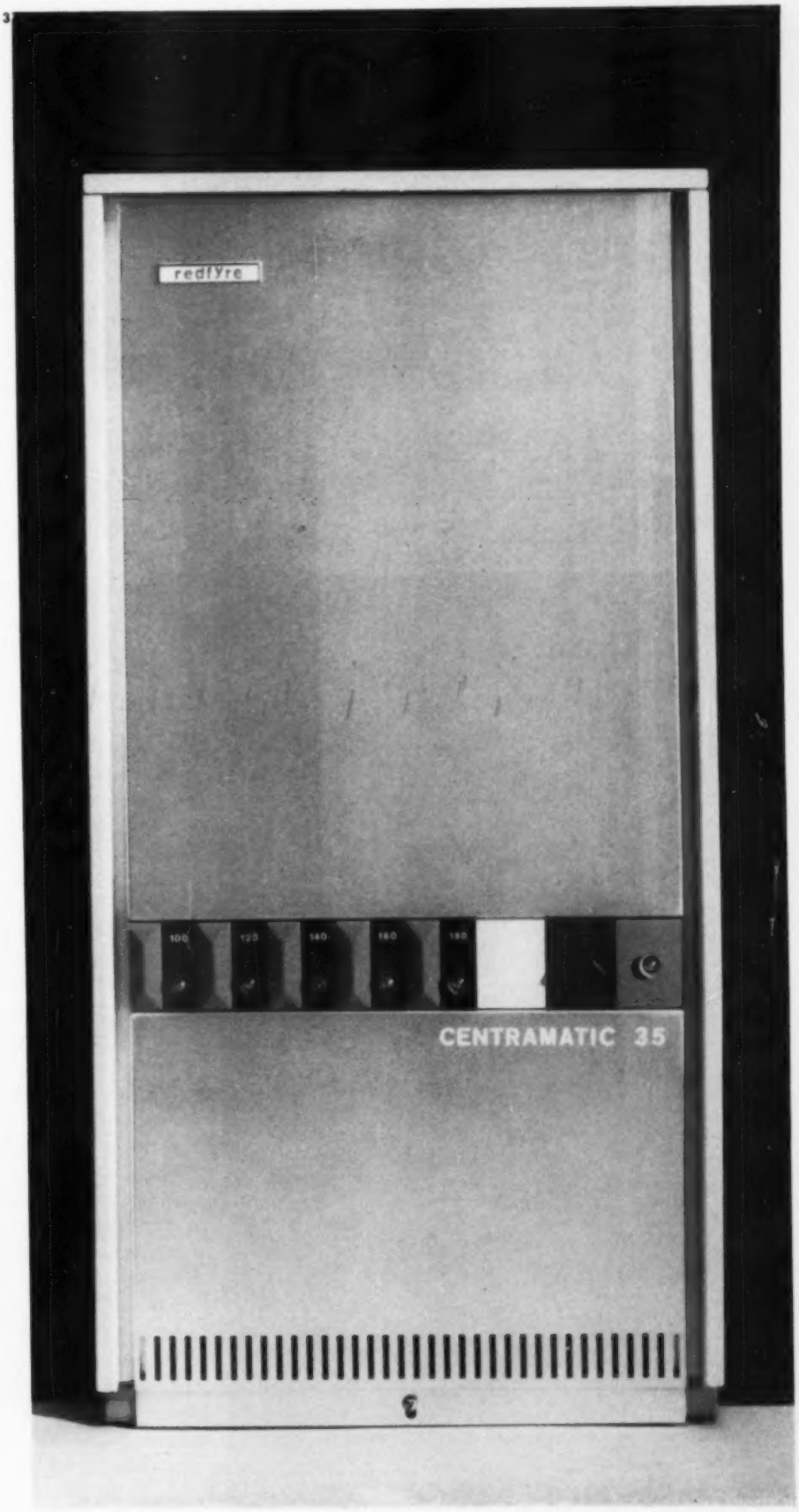
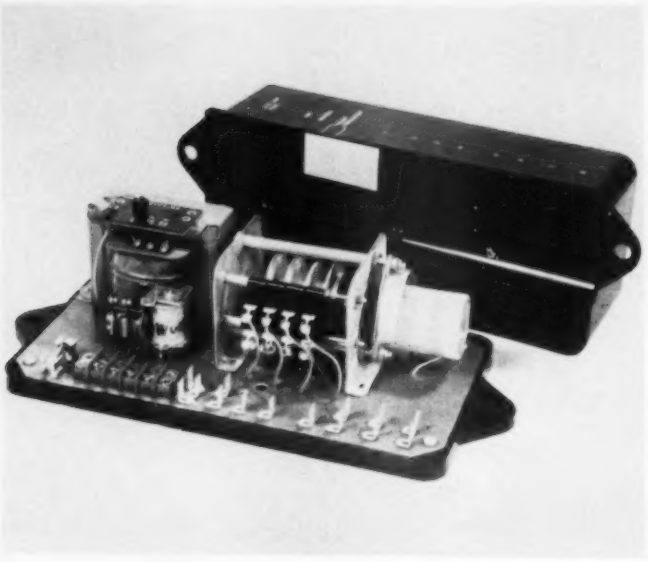
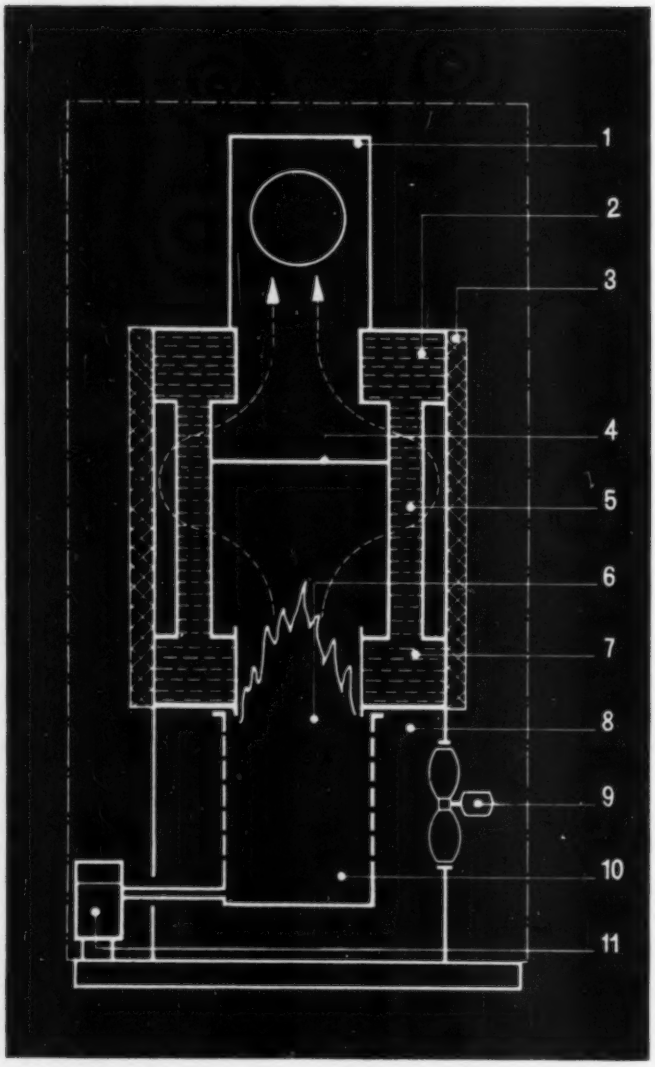




5 The control and timing mechanism is built as a sealed unit.

4 A diagram showing the main features of the boiler: 1 flue connection; 2 top waterway; 3 insulation; 4 circular baffle; 5 water tubes; 6 combustion zone; 7 bottom waterway; 8 pressurised chamber; 9 fan; 10 burner; 11 oil regulating valve.



through; a child playing with the control knob or a hesitant housewife must not be able to put the machine out of action. And so the operating mechanism has been designed with this in mind. Once the boiler thermostat contacts have closed and the timing motor has commenced running, the correct sequence of events is carried out regardless of any other countermanding instructions which are received subsequently by the control system. The new instruction is, however, registered, and when the full cycle has been carried out, operation recommences on the new instruction. Start-up and shut-down sequences cannot be interfered with.

The main concern of the industrial design consultant was to provide a covering for this boiler in line with its function as an automatic, sealed unit with access only for servicing; a product was required which would fit into the modern kitchen and be exceptionally easy to operate. The overall sizes were taken from the British Standard Specification* for kitchen units – 36 inches in height and 21 inches in depth. The width of 18 inches was the minimum possible for the boiler and its insulation.

Mr Asquith's early schemes were based on a rectangular frame into which was to be fitted the burner at the bottom, the boiler above, and controls sliding out on a tray. The side and front panels were to be hung from the supporting frame. However, this initial idea proved to be unsatisfactory and costly. To minimise expense in manufacture, the rectangular frame was dispensed with and the boiler was mounted directly on top of the burner unit, with the burner bolted to a base plate. Cabinet side panels are mounted on the base and held at the top by a single, central cross member. The front panel is in two parts, divided by a horizontal strip on which is housed the timing mechanism and control gear at the level of the junction between burner and boiler. The burner, fan and oil regulating valve are together sealed off in the lower part of the cabinet, **4**.

From the point of view of the user, the control panel is the most important part of the design; this is the only visual indication of

* *Kitchen Fitments and Equipment, BS1195*, British Standards Institution, *8s 6d.*

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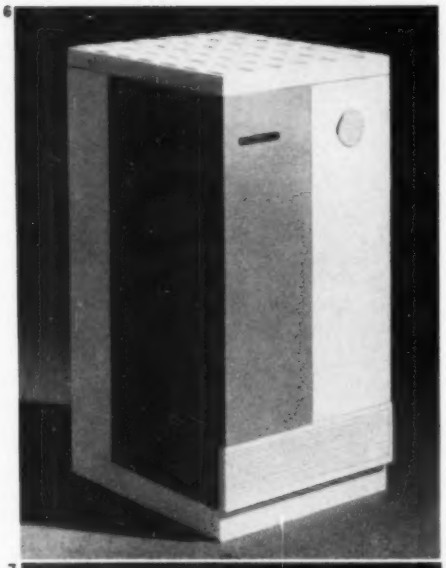

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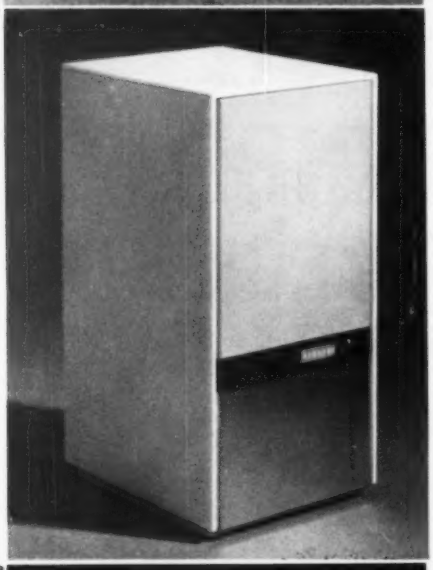

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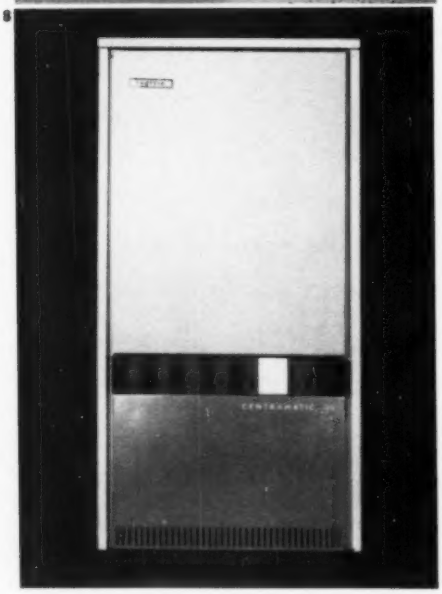

6, **7** and **8** Three stages of design are shown here: **6** and **7** are small-scale mock-ups, and **8** is the pre-production prototype.

9

Anthony Gest

the performance of the boiler. In the *Centramatic 50*, temperature is controlled by a graduated knob set high up. With the *Centramatic 35* the process of temperature selection and control has been refined further, and the control panel now has lamps to indicate the selected temperature.

The casing of the prototype model, **8**, differs little from the production model, **3**, but the changes made, though slight, result in an improved appearance. The *Centramatic 50* has a stainless steel trim framing the front panel and this has proved to be a costly item to produce. It was therefore not repeated for the *35* model; instead, the front is neatly framed by the side and top panels. The lower panel can be removed for inspection.

Controlled production tests

Full production of the *Centramatic 35* was not started until there had been a short production run of a few dozen boilers under the full control of the development section in its own workshop. At the same time, field tests were put into operation. Thus all the early production stages, including specification and ordering of parts, were under the control of the development engineer and the consultant designer. This enabled any major snags to be ironed out before bulk production commenced. Such has been the market success of the *Centramatic* designs, that a factory has been built for producing these boilers alone, and at least 500 boilers a week can be assembled, tested and packed, **9**, ready for dispatch.

The consultant designer and the development engineer operate within the framework of the firm's development committee on which the three aspects – sales, production and development – are represented. This has meant, as far as one can judge, that they have had a free hand with only the concept stated in the brief to meet. What is also obvious is the close relationship existing between them. It is hardly surprising, therefore, that this strong, well balanced team has produced a pace setter (witness the *Design Centre Award*, DESIGN 150/59), standing out clearly from the run-of-the-mill designs often to be seen in the home today.

LETTERING & LEGIBILITY
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Direction signs for motorways represent a radical departure from previous highway signs put up by the Ministry of Transport in that place names are in lower case letters. When the first experimental signs were erected on the Preston motorway in 1959 this change from the traditional practice of using capital letters aroused considerable controversy, and arguments for and against the new signs were reported in the article Which Signs for Motorways? (DESIGN 129/28-32). *One problem was that conflicting conclusions could be drawn from the available data on the comparative legibility of lower case and capital letters, and the article recommended that further research should be carried out to see if the arguments could be settled on a factual basis. Subsequently, both London Transport Executive and the Road Research Laboratory have conducted experiments, reports of which are published here in summarised form together with comments from three graphic designers.*

RESEARCH ON BUS BLINDS . . .

HAROLD F. HUTCHISON,
publicity officer, London Transport Executive

At London Transport we have approached the controversy on whether lower case or capital lettering is preferable for signs with reference to three of our types of publicity – the lists of station names on our ticket machines, the station names on our diagrammatic maps and the names of destinations and places served on our bus blinds.

On ticket machines we have unhesitatingly introduced the lower case system, and on our new diagrammatic map, **1**, we have used capitals for our more important stations and lower case for the less important – a practice which has always applied to geographical maps.

On our bus blinds we came to more controversial ground, and it was decided that our director of research should carry out some scientifically controlled tests related to our own special needs. It does not follow that the results of this research apply universally, and it should be noted that all tests were made with the condensed sans serif lettering designed for London Transport by the late Edward Johnston.

It was essential for operational reasons that we should have as many names of intermediate roads and places as was possible in the given space, and it was decided that we could reasonably afford four lines of three inch capitals as the maximum.

There will be some readers of DESIGN who will be interested in the detailed report*. But here is a brief outline of the tests made and their results:

Tests were designed to assess first the 'distance legibility', and second the 'glance legibility', of two front bus blinds, one arranged in capitals and the other in lower case. Distance legibility was comparatively simple, but glance legibility, or the capacity to take in a message quickly from a brief glance, necessitated more complicated tests, **2**.

All the tests were carried out with a group of observers made up of a representative cross-section of new entrants to London Transport and of our laboratory staff – both male and female. For distance legibility each observer wrote down the complete message as soon as he could read every word (this of

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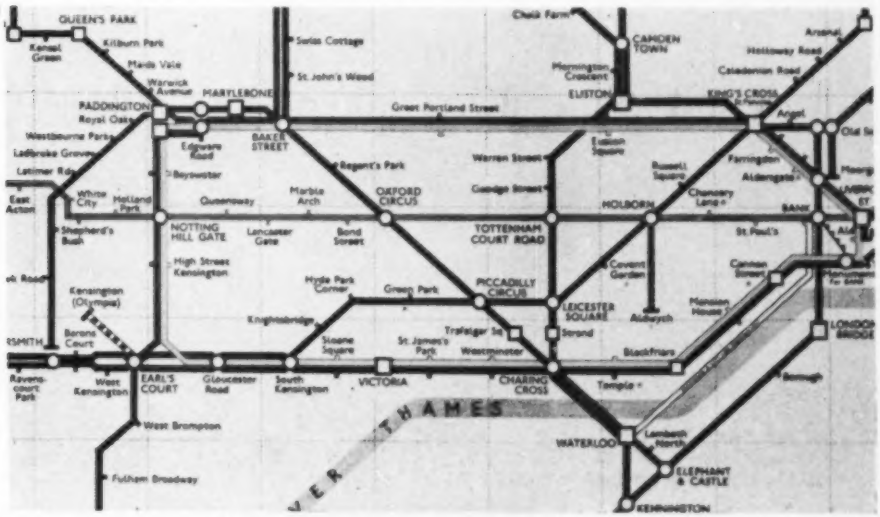


2

course was checked), and his distance from the blinds at this point was noted. Various checks were devised for avoiding bias, but the broad conclusion was clearly that there was no appreciable difference between the results for the two different types of blind.

Glance legibility testing required a screen with a shutter placed at about 30 ft from the front of the buses. The observer was placed behind the screen and the shutter opened. The time taken for the observer to find a particular place name on display was recorded. This was repeated for a further three times with either display. The wording of the blinds was elaborately mixed so that memory played no part in the exercise. Again, the overall result was that there appeared to be no significant difference in the time taken to read lower case as against capitals. Exactly the same results were obtained at night as in daylight – which shows that there is nothing wrong with the London Transport method of making and illuminating the blinds.

A further test we called the 'treasure hunt' test. Two blinds were erected. The observer was given, for example, Ringwood as a starting point and the shutter opened. Ringwood gave him Gargrave, Gargrave gave him Hamilton, and so on. The time was measured from the opening of the shutter to the finding of the final 'treasure'. Again, there was no significant difference between the two systems, but of course unfamiliar names took longer to read than the familiar names of the previous list. All results were statistically checked.

London Transport was therefore told by its research department that so far as its bus blinds were concerned there was no scientific proof that lower case was superior to capitals.

Before making our choice we prepared a final test to help us. Two mock-ups, **3** and **4**, were erected, one representing a bus front top for a typical London route in capitals, and the other giving the same information in lower case, but in both instances we retained capitals for the name of the final destination of the bus – this seemed to us a sensible compromise suited to our own needs. I think readers of DESIGN will agree with us that the upper photograph, **3**, is superior as a typographical design, and when tested over a cross-section of the public it also met with popular approval.

The London Transport Executive has, on the strength of these various tests, and on the advice of those responsible for design matters within the organisation, decided to go ahead with new bus blinds on the lines of the upper illustration, **3**, but it will of course be some time before we begin to see the results on the London streets.

My own belief is that for ourselves our compromise is sensible and right, and that even on road signs there is a great deal to be said for retaining capitals for major destinations and lower case for minor. The dispute which is now brewing as to serif *versus* sans serif type founts is so old (and so futile) that we are happy to continue to use the masterly sans of the great Edward Johnston.

* *Research Report Summary 118: Final Report on the Comparison of Upper and Lower case Lettering on Bus Blinds*, London Transport Research Department (a few copies are available on application to T. Wilford, director of research, 55 Broadway, London SW1).

3

4

. . . AND ON ROAD SIGNS

A. W. CHRISTIE *and* K. S. RUTLEY
Road Research Laboratory, Department of Scientific and Industrial Research

The types of lettering compared in these tests* are shown in **5** and, reading from the top, are as follows:

(a) the sans serif upper case script used on signs on ordinary roads (based on lettering designed by Edward Johnston);

(b) a seriffed upper case script designed by David Kindersley; and

(c) and (d) the sans serif lower case script used on the motorway signs, and designed by Jock Kinneir; (c) in close spacing, and with an x height of 2·4 inches and (d) in wide spacing with an x height of 2 inches.

The aim of the experiment was to determine which of these types of lettering would enable drivers to read a sign of fixed area from the greatest range. The reason for making the comparison on the basis of equal area is that the cost of a sign is roughly proportional to its area. The reason for using reading distance as the criterion of effectiveness needs a little more explanation. Since road signs should be readable with the minimum possible distraction from driving, they should be readable, first from the greatest possible range (to keep the angle between the driver's line of sight and the road ahead as small as possible), and second in the smallest possible time. The best single criterion on which to compare two signs, therefore, seems to be the distance at which a driver approaching a sign finishes reading it, for this depends on both the static legibility distance and the time taken to read it.

The reading distance for a sign of given area under a given set of conditions depends on the type of lettering, and also on the extent to which the lettering fills up the available space. The reading distance is small, if small lettering is used, but increases as the letter size is increased, until the legend nearly fills the whole of the available space. Any further increase in letter size leads to a reduction in reading distance. From a preliminary experiment reported in DESIGN's earlier article, it is known that in the case of white lettering on a black ground the maximum legibility distance is obtained with marginal and interlinear spaces of the order of two stroke widths. The signs used in the experiment to compare the different letter types were designed approximately in accordance with this finding. While it is not certain that precisely the optimum condition was achieved with any of the scripts, since the variation in spacing near the optimum condition results in little variation of legibility distance, all the indications are that possible improvements would not amount to more than a few per cent. However, as a check on the effect of spacing, a second set of signs using the motorway script, **5**, was added with wider marginal and interlinear spaces of the order of four or five stroke widths. Further details of the spacing conventions adopted are given in the Appendix (page 60).

Legends on the experimental signs

Since one of the advantages claimed for lower case lettering is that it gives to place names characteristic shapes which enable familiar and expected ones to be recognised from their general outline, care was taken to obtain a representative sample of familiar English place names. The choice was restricted to the names of places with a population of over 50,000. The average number of letters in such place names is 8·23, the average number of ascenders 2·13 and the average number of descenders 0·44. A random sample of 18 such place names was chosen which had the correct average numbers of letters, ascenders and descenders, and which also had the right proportion of long and short names and the most frequently occurring combinations of ascenders and descenders.

Six of the names were then selected for six single-name signs and the remaining 12 used on six two-name signs. The same 18 names were used again on six three-name signs. All these selections were made using tables of random numbers. For simplicity it was decided to have merely the place names on these experimental signs and to omit any directional symbols.

A further six legends were selected which consisted of written messages, either instructions such as 'Keep Left' or warnings such as 'Ice'.

A total of 96 signs was used, four versions of each of 24 sign legends. Examples are shown in **5**. These were produced by photographic enlargement, so that the areas within the white borders of corresponding signs were equal within an accuracy of better than 2 per cent. The average height of the upper case letters was approximately 3 inches, while the x height of the lower case letters was 2·4 inches (the close spacing) and 2 inches (the wide spacing).

Experimental procedure

The tests were greatly speeded up by fixing the signs to a khaki coloured panel mounted on top of a car. The car was then driven at 30 mph towards groups of from 10-15 stationary observers seated on a tiered

5

* A. W. Christie and K. S. Rutley, *The Relative Effectiveness of some Letter Types designed for use on Road Traffic signs*, published in *Roads and Road Construction*, August 1961, Carriers Publishing Co Ltd, 3s.

platform. Though this is the reverse of what happens in practice, it is unlikely that it would affect the order of merit in which the signs were placed. An average of 37 observers (all volunteers from the RAF) saw each sign and, since they were asked to read individual names on separate occasions, more than 6,000 reading distances were recorded, all in fine weather conditions.

Before the experiment, the observers were shown a list of the legends (place names and warnings) which would appear on the signs. The names and messages were therefore 'expected'. No information was given about the types of lettering or the purpose of the experiment.

Each observer was instructed to press a button immediately he could read the required information on the sign. The button operated a pen of a moving chart recorder. An additional pen was used to record the receipt of radio signals transmitted from the car after every 10·8 ft of travel and another to record the passage of the car over a pneumatic detector opposite the observers' platform. The chart therefore enabled the reading distances for each observer to be obtained.

The experimental signs were presented in a balanced random order. The order was varied for different groups of subjects so as to eliminate any bias due to practice, learning or fatigue.

Results

The mean reading distances are given in **6**.

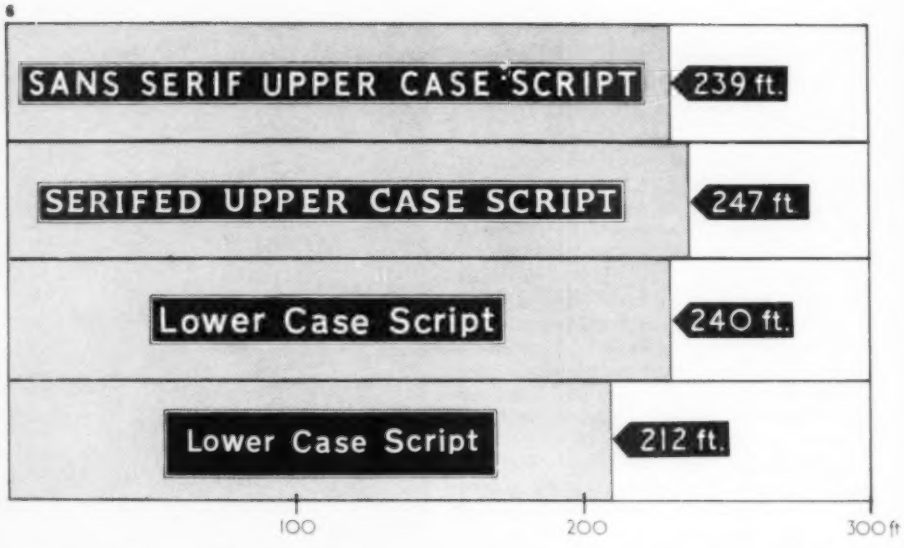
The largest observed effect on reading distance was that due to the change in the spacing convention. The mean distance for the closely spaced version of the lower case script was about 12 per cent greater than that for the widely spaced version (this difference being statistically significant). This finding supports the conclusion from the preliminary experiment on spacing, and the view that the reading distances obtained with the three closely spaced scripts are near to the maximum values which could have been obtained with the sign areas used.

The observed difference between the distances for the closely spaced version of the lower case script and the sans serif upper case script is not statistically significant (ie, it could have arisen by chance). The difference between the distances for the seriffed upper case script and the other two scripts is about 3 per cent and this is statistically significant (ie the difference is unlikely to be due to chance.) However, as it is not certain that precisely the optimum spacings were used, it is possible that minor modifications in layout might slightly change the estimate of this difference or even reverse it. It is perhaps worth pointing out that it is not at all certain that the difference is due to the serifs, since the scripts differ in other ways which affect legibility (eg, the width to height ratio).

Conclusions

What the results do clearly indicate is that none of the three scripts tested has any appreciable advantage over the others with regard to legibility. Consequently, it is unlikely that large differences can exist between the maximum reading distances obtainable with good upper and lower case scripts, whether seriffed or sans serif.

6



Since there is little difference in legibility between the different types of lettering, it seems reasonable to make the choice on aesthetic grounds. Aesthetic considerations may enter also into the choice of the convention to be adopted for the marginal and interlinear spaces. As has been shown, the most economical solution (smallest sign) is obtained with quite narrow spaces. If it is thought that a better appearance is obtained with wider spaces and that this is desirable, then the signs to give the required reading distance will be larger and more expensive. For example, the area and cost of the widely spaced version of the lower case script used in this experiment would have to be increased by 25 per cent to give the same reading distance as the closely spaced version of the same script.

APPENDIX

Upper case scripts

The interlinear and marginal spacings were a fairly constant multiple of the stroke width for the two upper case scripts, and average values are given in the table below. For the sans serif script the stroke width was constant, but for the seriffed script the stroke width was different at different parts of the letters, and the value used was that obtained by measuring across the middle of vertical strokes (such as the leading stroke of D). In all cases the clearances mentioned in the table are based on minimum clearances, eg, the clearance between an initial capital C and the left hand border was measured halfway up the letter.

Average spacings (number of stroke widths) in inches

	a	b	c	d	f
Sans serif upper case	1½	1½	1½	1½	2½
Seriffed upper case	1½	1½	1½	1½	2½

Lower case scripts

The spacings for the widely spaced version of the lower case script were much more variable (probably because each sign had been designed separately). The values given in the table below are average values. The convention adopted for the closely spaced version varied slightly according to whether or not there was a letter with a descender in the bottom line.

Average spacings (number of stroke widths) in inches

	a	b	c	d	e	f	g
Widely spaced version	5½	4½	4	5½	4½	3½	1½
Closely spaced version with							
no descenders in bottom line;	2	2	2	2	–	3½	1½
with descenders in bottom line	2	2	2	–	1	3½	1½

Acknowledgement This article is published by permission of the director of the Road Research Laboratory.

COMMENTS

DESIGN invited three British graphic designers to read the two reports, and submit their comments

Herbert Spencer: It is the designer's function to evolve solutions which are satisfactory on both practical *and* aesthetic grounds. Neither the one consideration nor the other is of greater value so far as the designer is concerned, and only a design which fully satisfies *both* requirements ought to be regarded as 'good' or 'successful'.

What is aesthetically acceptable is a matter of taste, tradition, relevance, and fashion. But the practical element can generally be measured and assessed, although the methods and techniques for carrying out such tests are sometimes difficult to devise. In the case of lettering and typography such tests are especially difficult to arrange since legibility and readability are determined by both physical and psychological factors.

These two reports on carefully arranged tests conclude that there is no significant difference between the legibility of upper and lower case on the one hand and between the sans serif used by Jock Kinneir on M1 road signs and the partially seriffed letter proposed by David Kindersley on the other. Mr Kinneir's M1 lettering closely corresponds with that used by most European countries, and I personally believe that this should be adopted for all British road signs. (The fact that as a nation we seem to prefer flights of prose on our road signs rather than simple, internationally understood symbols ought not, I think, to lead us to use book types for road signs). If the Road Research Laboratory tests had proved that Mr Kindersley's lettering was overwhelmingly more legible than Mr Kinneir's, then I would accept the case for abandoning the latter; but, as a designer, I would be quite unable to accept the former, which I find clumsy and which, I think, ignores both taste and tradition alike. If, then, the result of these tests had been strongly in favour of Mr Kindersley's lettering, as a designer I would have needed to know (and this is where scientific tests have so far proved of little help) what were the particular characteristics that made this style more legible than the other under conditions of movement. For only with this information would I be in a position to try to arrive at a form of lettering that would be efficient in use and that I would find aesthetically acceptable.

Such tests of lettering as these are therefore useful in disposing of pseudo-scientific arguments, but in cases where the results strongly favour a particular design they must, to be of practical use to designers, be elaborated upon so that we can clearly understand *why* one design functions more effectively than another.

Reynolds Stone: As far as they went, the experiments described in these reports proved surprisingly that there was barely a pennyworth of difference between the legibility of capitals and lower case letters. There was, however, one rather glaring omission which left the issue still in doubt. Except for a set of unusually seriffed capitals designed by David Kindersley, all the experiments were made with sans serif letter forms. One might have supposed that a fairly condensed bold seriffed Roman lower case would have been ideal (lower case cries out for serifs more than capitals). Or even an Italic, which, of all forms of the alphabet, uses less lateral space for a given size and can be beautifully clear.

The Road Research report goes out of its way to emphasize that "aesthetics as opposed to economics" were hardly considered (does the latter just mean the cost of the making of the signs?). Yet in a matter so purely visual, aesthetics will keep breaking in. The authorities rightly employed a good designer, Jock Kinneir, to make new signs, which were an enormous improvement on the old Ministry of Transport ones. Did he or they suggest sans serif forms? There was the example of Edward Johnston's London Transport sans; and the forms used on Continental highways perhaps encouraged the feeling that the sans serif letter would look up to date. Of course such types were in use more than 100 years ago, yet it appears at intervals as the latest thing, notably in the 'twenties with the New Typography inspired by the Bauhaus. Fashionable or not, the use of sans meant ignoring experts like the psychologist Sir Cyril Burt, who "has recently recalled and reaffirmed scientific findings that 'for word recognition a sans serif type face was the worst of all'." (see *Letters without serifs* by P. M. Handover in *Motif 6*). Presumably motorists, as well as *Motif* readers, are concerned with 'word recognition'. A test with a good seriffed lower case might have been interesting.

Mr Kinneir's white lower case letters are well drawn and look clear on their coloured ground. His numerals could be more legible, and possibly his lower case G (a difficult letter).

The report on the legibility of bus blinds was entirely concerned with comparing the legibility of the capitals and lower case of the condensed version of Edward Johnston's sans serif letter. What an excellent alphabet it is! The narrowness of the forms makes up to a certain extent for the absence of serifs. It might have shown up well on the motorway.

An afterthought: the restriction of lower case for town names and the use of capitals for injunctions like 'No Entry', when they have more force, might make for overall clarity. Will this be done?

Colin Forbes: All designers should welcome independent scientific evidence in their field of design. The two reports summarized here at least clarify some simple points. It would appear that there is so little difference between alphabets based on a classical Roman form with or without serifs as to make argument useless.

The problem in research, however, is that the level is so elementary – and yet permutations of letter design in relation to spacing and the variations of capitals and lower case are endless. The whole problem is very pertinent to me at the moment, as I am involved with a new signposting system. This is an extension and variation of a project that I worked on a few years ago. The discussion in the Road Research report points out that the very slight advantage of capitals may well be reversed by reduction of the interlinear spacing in the tested signs. The most significant alteration is in the spacing of the signs, and I have already decided to reduce the margin areas and interlinear spacing to the minimum. This is by no means an innovation, only an extension of the trend in magazine and book design. This trend has, however, been mainly intuitive, and it is reassuring to have it confirmed by research.

The full version of the Road Research report claims that there was a tendency for imperative messages to be more effective in capitals. The full version of the London Transport report states that public opinion would be equally divided between capitals and lower case. A thought struck me that the real division among designers is one of two generations, allowing for the fact that many belong to a different generation from the one their age would suggest.

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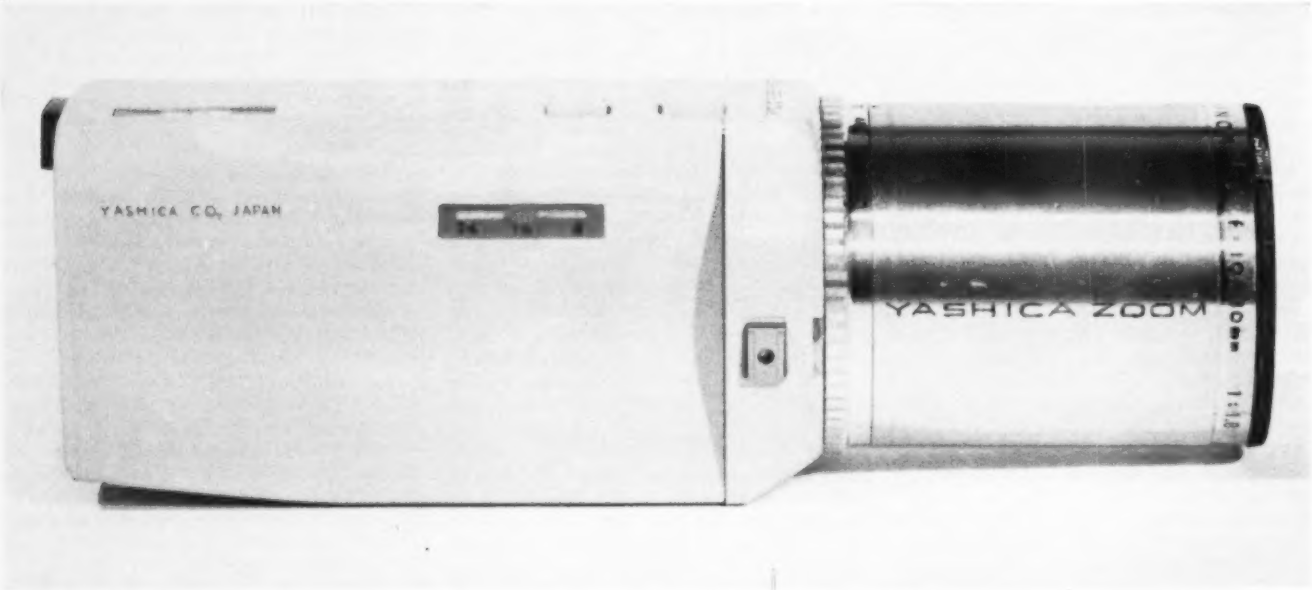

Japan : industrial design competition

The judges for the ninth Japanese *Industrial Design Competition* reported that the general standard of design remained high, but none could be considered outstanding. The competition, organised annually by the Mainichi Press, is for new product designs which may be submitted in the form of drawings, models or prototypes. Japanese industries take an active interest in this competition, for manufacturers are invited to act as sponsors to select various categories of products. In this way close co-operation between designer and industry is encouraged; the designer has the incentive that his design may eventually go into production, so fostering a practical solution to design problems; and the manufacturer has the rare opportunity to see what contribution an industrial designer can make to his products, without committing himself to an unknown quantity. Some of last year's prizewinners were illustrated in DESIGN 136/56-57.

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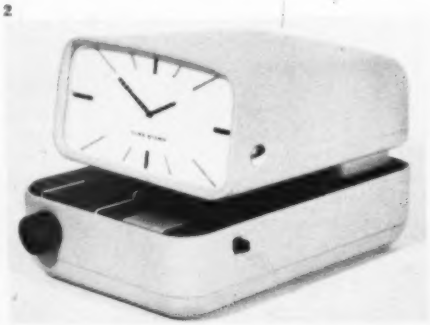

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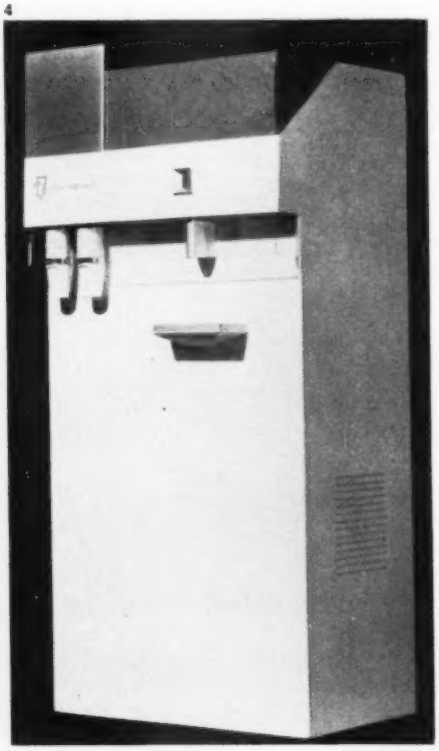


A selection of the chosen designs

1 First prize of about £500 was awarded to M. Yaguchi and N. Okamoto for this 8 mm ciné camera with zoom lens, designed for Yashica Optical Industry Co Ltd.

2 In second place was a clock recorder, gaining a prize of about £200. DESIGNERS *K. Tomikawa, K. Yashikawa and Y. Shino for Amano Tokushu Kikai Co Ltd.*

3 Alarm clock. DESIGNERS *H. Saito and two others, for Seikosha Co Ltd.*

4 Vending machine for cool drinks. DESIGNERS *M. Honda and five others, for Hoshizaki Electric Co Ltd.*

Italy: utility chair

This injection moulded, styrene chair derives its form from material limitations rather than a preconceived idiom, according to the designer; and it provides an interesting comparison with Paul McCobb's designs shown in DESIGN 133/59. The characteristics of the plastics material are such that any thin sections must be small in area to provide the necessary constructional strength. In the design, the shell thickness varies between $\frac{3}{16}$ and $\frac{1}{4}$ inches. Sections are joined and reinforced by beadings on the underside and back. Such a system is said to achieve a fast flow of material during the moulding cycle. Legs are of tubular steel, painted black. Retail price of this utility chair in Italy is about £1 10s. The designer, Richard Neagle, is an American who, for some years, has been living in Italy.
MAKER *Sicedison*.

Turkey: telephone kiosk

There is now a growing awareness of the importance of good design in Turkey. Although there has been rapid industrial development since 1948 most products are of Western design produced under licence. The pre-war political drive of Ataturk to turn Turkey into a European nation, down to cloth caps and doublebreasted suits, has encouraged an imitation of the Western idiom and has tended to suppress any internal creative force. However, a change is now to be discerned. Trained carpet and textile designers are attempting to break with old tradition and establish a national style. In particular, two state organisations are patronising industrial design, the State Monopolies, which are both producers and packers of all tobacco, wine and spirits, and the Turkish Post Office. An example of the latter's work is illustrated here.

Most public telephone facilities in Turkey are grossly inadequate – dilapidated open wooden hutches in the noisier part of the post offices. To remedy this a new telephone kiosk has been designed by Aydin Aykan, director of the post office factory, and his assistant, A. Güçer. Prototypes were set up in Istanbul last spring, and modified after a few months of use. Although the finish could be improved, it is an ingenious, simple design, mainly constructed in steel and glass, with an aluminium door pull. A plastics covered shelf faces the door, and to its left is a coin-operated telephone of Swiss manufacture and design. The ceiling is covered in a soundproofing material and the floor is finished in blue glass mosaic. CORIN HUGHES-STANTON

Switzerland: office building

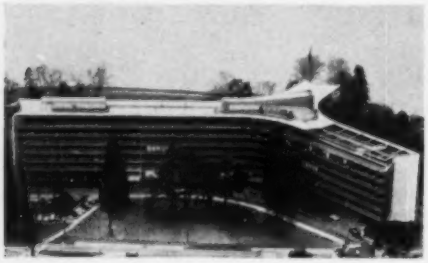
Office blocks are so often dull by day and dead by night that it comes as a delightful surprise to find one that is not only a fine piece of architecture in itself, but is also so well laid out in the surrounding landscape that it actually enhances its beauty, as, ideally, every great building should. It is the new Nestlé building in Vevey, and no one who has seen it will be surprised that Professor Jean Tschumi, the architect, was awarded the coveted American *Reynolds Prize* for the finest building of the year.

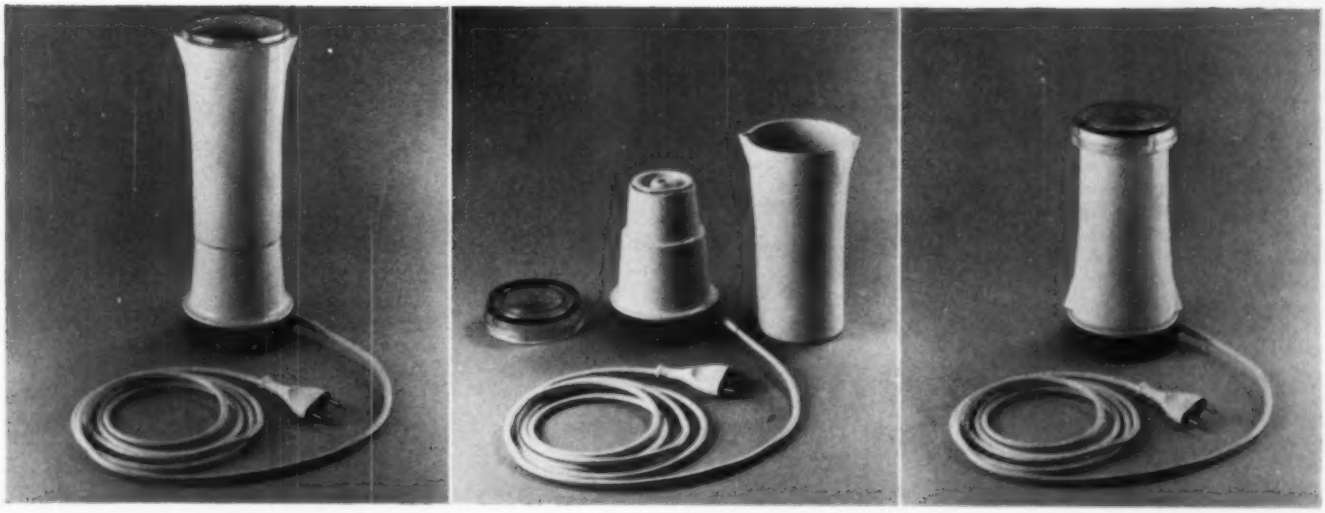
Sited on the shore of the lake of Geneva, in full view of the Savoy Alps on the south side and of the vineyards of the Mont Pélerin chain on the north, the building has been so designed as to make the most of its exceptionally beautiful vistas. The ground floor is practically transparent, being taken up largely by a 60-yd long reception hall clad entirely in glass, so that the passer-by may see the lake and the mountains through it from the street.

The building, in the form of a shallow letter Y, is made of pre-stressed concrete, and the curtain cladding consists of aluminium alloy frames and specially treated, blue-tinted glass panels, comprising altogether 5,014,500 cu ft. All six floors are air-conditioned, with a system which allows a draught-free air inflow and individual temperature control in each room. Refrigeration is effected by water siphoned from the lake at a depth of 150 ft.

All the furniture has been designed and built specially for this building; the new desks are of steel, ingeniously adapted to the requirements of every branch of office work; those for the secretaries, for instance, have a space for each kind of stationery, while the draughtsmen's have built-in drawing boards with room for pencils, brushes, etc.

A restaurant, on the top floor, commands such a splendid view and is so handsomely appointed that it could be part of a luxury hotel. The building is set, in fact, on the site of such an hotel, whose park has been carefully preserved. Altogether, it makes for as near ideal working conditions for the staff as may be found anywhere. RENÉ ELVIN



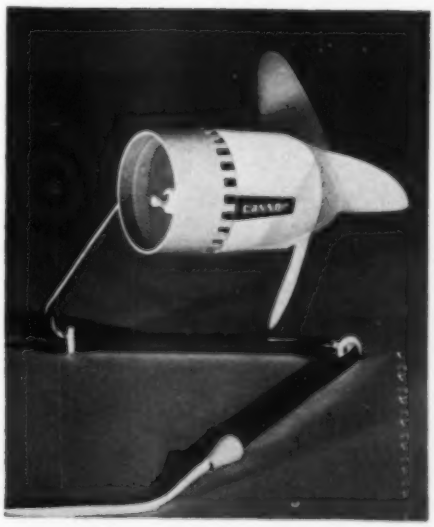


Italy: coffee grinder and mixer

A number of inexpensive electric powered coffee grinders selling at around 30s to £2 are produced in both France and Italy. In general, these are difficult to clean as the grinding compartment is directly above the motor and cannot be separated for immersion. In this Italian model this disadvantage is overcome but at increased cost. Not only can the container and knife blade be taken from the motor housing for cleaning, but, when inverted, the container forms a larger compartment complete with blades which can be used for mixing fruit drinks, etc. This neat arrangement incorporates a nylon shaft and bearing set into the melamine moulding; either end of the shaft can be located in the motor drive. MAKER *Elchim spa*. PETER E. M. SHARP

Switzerland: stamp

In most countries, stamp design is the last stronghold of curlicues and convention. This recent Swiss stamp may well have horrified some philatelists, but it is a logical extension to this medium of the current Swiss style in typography, with its emphasis on Grot types and asymmetry. It was designed by Emil Ruder, whose students have included Karl Gerstner, one of the team responsible for the Holzäpfel house style (DESIGN 145/28-30).



France: electric-powered fan

Simplicity is the keynote in this ingenious design. A single chromium plated tube provides support and base mountings, as well as serving as protection for the electric cable which enters the tube, at its open end, through a large ferrule. The fan can also be hung on a wall. A plastics case encloses the motor, and adequate provision for motor cooling is made by the air vents which are located at the junction between the two-part moulding. The fan blades are in polyethylene. The whole motor-fan assembly can be swivelled, in a vertical plane, around its support.

This particular feature has been incorporated for two reasons. Not only can the user direct the flow of air where required but, for packaging, the motor can be swung downwards so that the fan blades lie within the area delineated by the triangular base. In this way the fan can be fitted into a pack of triangular cross section. Its dimensions are such that seven triangular packs can be contained within a volume equivalent to four square packs of similar length of side. DESIGNER *T. Meunier*. MAKER *Cassor*.

PEOPLE

The plastic approach

Ronald Brookes, who has recently set up a practice as a free lance designer, is best known for the *Fiesta* range of melamine tableware (the plates received a *Design Centre Award* in 1960). But he is also a young industrial designer with a far wider variety of product designs to his credit, especially in the engineering and instrument fields. Navigation instruments, yacht fittings and engineering parts have all been designed by him during the last few years.

Trained at the Birmingham School of Art and Crafts, in its industrial design department, Mr Brookes also received a thorough training in engineering. He was apprenticed to British Industrial Plastics Ltd, where he worked through every engineering stage of production before arriving at the firm's design department. It was his engineering background and training which helped him to guide *Fiesta* through the various stages of its production in his own works – Brookes and Adams Ltd. Not only did he design the product itself but also the engineering tooling to produce it. It is not surprising, therefore, that he believes that a thorough knowledge of production processes is essential to every industrial designer.

A designer who has had success with one particular product, in a particular material, is in danger of being 'type-cast'. Mr Brookes is anxious to avoid this. He wants to work not only with plastics but with a diversity of materials. He feels that there is a tremendous field in the design of machinery and capital equipment. Because of the concentration of engineering production in the Midlands, he feels that the region has a special role in this respect. Germany and Japan are taking machine orders away from Britain because their machinery is better designed. We need to wake up to the fact that other countries are stealing a march on us.

Mr Brookes takes a leading part in the virile Midlands Group of the Society of Industrial Artists. This group has already held its own exhibition recently. Now the Birmingham City Art Gallery has declared its interest in the possibility of holding a public exhibition of the work of industrial designers in the Midlands. This, as Mr Brookes sees it, could put industrial design before the public and before firms who have not yet grasped the opportunities which well designed products open up, especially in export markets. If such an exhibition is held it is certain that the work of Mr Brookes will occupy an important place alongside that of other young industrial designers in the Midlands.

Kenneth Garland

Flying colours

"Ultimate success", Gaby Schreiber wrote in a recent article "depends on the designer's craving for perfection and on the energy expended during the period of production. If he is blessed with an authoritative personality and is backed up by the client no shortcomings should occur."

Unwittingly, but indubitably, Austrian born Mrs Schreiber had herself in mind when she laid down this axiom. From the time she left an assistant stage designer's job in pre-war Europe to today, when she is head of one of the country's most successful design organisations, her personal watch-words may well have been perfection, energy and authority.

Certainly her gently feminine air of being in charge of the situation was a factor in the revolution she worked in BOAC's aircraft interiors. *Punch* magazine hinted at this when she first won the contract. "BOAC did not look for a woman designer", said *Punch*. "It was simply that the best man for the job turned out to be a woman." Recently she has completed her most ambitious project for BOAC – the interior schemes for Vickers' new giant jet aircraft, the *VC10* due to be completed in 1963.

Although interiors – everything from department stores to soap factories – have been the strong suit of her sizeable organisation, it was furniture that first drew Mrs Schreiber away from the Continent. She came to Britain to help the Earl of Antrim with his then new furniture factory in Ireland. From there she went into plastics – breaking new ground by insisting that designers in plastics should create new forms instead of slavishly following those already set down for clay and metal products. The RAF liked her approach and chose her to design plastics replacements for all sorts of things from aeroplane fittings to canteen equipment. It was on wartime contracts that she launched her own now thriving company, Gaby Schreiber and Associates.

Within months of the war's ending Mrs Schreiber designed Britain's first all plastics and aluminium

kitchen, soon following that achievement with a bedroom suite in the same materials. Her interest in household goods led her to consider retail interiors which she then began designing all over Britain. Next came industrial interiors, and a most unusual commission for a woman designer – she was invited to the States in order to redesign personnel and equipment huts for the US army.

Apart from her work with BOAC, probably the most impressive contracts Mrs Schreiber's organisation has handled are the David Morgan department store in Cardiff, the Queensway store in Crawley New Town, and offices and research laboratories for Thomas Hedley & Co in Newcastle. Her most recent big job was the interior of the Peter Robinson store in Bristol. In addition she has produced new ideas in textiles, pottery, light fittings and glassware and has specialised in the planning of exhibition display stands. As a colour expert she is retained by several clients, including two divisions of the Dunlop Rubber Company. For all this work she has developed a meticulous and comprehensive system for specifying colours, materials and finishes – a system which has done much to reduce errors when her designs are translated into the finished article. A member of Council, CoID and an FSIA, she was a member of the selection panel for this year's Duke of Edinburgh's *Prize for Elegant Design*.

Yet none of these activities stands out in her mind as being nearly as exciting as whatever project is currently on the drawing board she keeps in her impressively furnished office. It does not matter what the challenge is – it might be anything from a room in her own beautiful Queen Anne farmhouse to the interior of a private yacht – as long as it is new and demanding of perfection. JAMES W. MCLEAN

Silversmith for the 'sixties

Robert Welch is a young industrial designer who has already made his mark at the age of 31. It is only six years since he left the Royal College of Art, yet his work in stainless steel is known all over the world. In addition he has produced some outstanding presentation work in silver and in gold.

Mr Welch trained as a silversmith first at the Birmingham College of Art and Crafts and then at the Royal College of Art. He travelled widely in Europe during vacations and in 1954 worked with the Norwegian silversmith Theodore Olsen. When he left the Royal College in 1955 his work in stainless steel and silver was already becoming known, so he started to look for a workshop. It was Sir Gordon Russell who suggested *The Mill* – an eighteenth century silk mill set in the lovely Cotswold village of Chipping Campden. This was formerly the workshop of C. R. Ashby, one of the founders of the Arts and Crafts Movement.

The high point of Mr Welch's work so far is the range of stainless steel cutlery and hollow-ware he designed for the *Oriana* (DESIGN 147/50-51), and manufactured by Mappin and Webb Ltd, and J. & J. Wiggin Ltd respectively. His association with Wiggin's dates back to his student days at the Royal College. While working on a thesis about stainless steel he contacted the firm for information. This led from small commissions to his appointment as the firm's consultant designer, to the design of the *Campden* range, to a *Design Centre Award* in 1958 (for a toast rack), and to the *Oriana* range in 1960.

Now Mr Welch feels it is time to spread the scope of his work to industrial design in such fields as ceramics, plastics, kitchenware, etc. So far, his work in this direction has included a tea service in bone china for A. T. Finney & Son Ltd, sanitary ware for Doulton & Co Ltd, and a range of new clocks for Westclox Ltd.

This experience in other industrial design fields, together with his teaching in the industrial design department of the LCC Central School of Arts and Crafts for the last five years, has led Mr Welch to firm views about training and education. He feels that one cannot just be a silversmith these days. It is necessary to learn to work with other metals, especially stainless steel and aluminium. This means, as he sees it, that the training of silversmiths ought to take place alongside industrial design and relate to light engineering. Mr Welch himself is perhaps the proof of how the whole field of industrial design might gain from such an approach. ANTHONY GOSS

Iain Stewart Macmillan

QUOTES

Human scale

Professor J. K. Page, speaking on Science and Architectural Education *(his inaugural lecture as Professor of Building Science in the University of Sheffield):*

" . . . The present academic training of engineers can be criticised for its lack of visual content. The universities of this country train thousands of technically competent engineers, who are totally incapable, for the most part, of producing visually acceptable designs, being blind to appearance through no fault of their own, for they have been given no conscious feeling for visual design. As a consequence our whole country is littered with ugly engineered objects. The recent history of the Sheffield cutlery industry provides a fine object lesson of what happens when part of an industry fails to keep abreast of international taste in design. As our national livelihood depends on our capacity to produce internationally acceptable products, our present attitude of *laissez-faire* towards appearance in engineering design in universities seems lamentable. In this sphere of education, the engineer would seem to have as much to learn from the architect, as the architect has to learn from the engineer in other directions.

"Neither group has so far shown any significant interest in an important development which has come to be known in America as human engineering, or in this country as ergonomics. The traditional attitude in engineering design has been to concentrate on the problems of making the object at the expense of proper consideration of the object-user relationship. The science of ergonomics explores the problems involved in the design of equipment from the point of view of the human operator, or user, and clearly is of great importance in architectural science and also, I suspect, engineering science.

"I consider the primary technological objective in architecture is to produce a biologically acceptable environment. In the case of man, this environment is liable to become very complex. We have not only the physical environment to consider with all its related problems arising from human needs and activities with the resulting patterns of communication, but there is the social and cultural environment. Our buildings and the spaces surrounding them are the containers of our lives; they form our existential field of choice. Our lives are too deeply affected by the nature of this mould in which we live for us to be able to ignore it. The architectural poverty of our present environment in most of industrial England is appalling.

TECHNIQUES OF INVESTIGATION

" . . . Finally there is the scientific study of user requirements. The basic problem to be answered is what do users of buildings want out of them? What is the correct organisation of a particular type of building, say a hospital or a school? Problems of this kind invariably have a large sociological content, and are best explored by a balanced team of investigators capable of understanding the different facets of the problem. For example, the original Nuffield team which investigated hospital design included a physician, a nurse, a sociologist, a statistician and an architect. Clients often assume they know what their building needs are. It is sometimes embarrassing to discover their real degree of ignorance as revealed by a systematic scientific investigation of their actual operational needs. In these fields of investigation the techniques of operational research and sociology are obviously fundamental, though I have a suspicion that operational research is not yet fully academically respectable in Great Britain. There are also the ergonomic factors to consider, for example the scientific sizing of built-in furniture, the special physiological limitations of old people, the correct height of chairs, the response characteristics of human beings to information signals and so on. It would probably be hard, for example, to find one single chair in this university which conforms to the recent anthropometrically based British Standard recommendations on chair dimensions.

" . . . I personally believe architecture wants a new human orientation, and I am going to concentrate on these sciences which deal with man in relation to his environment, though, clearly building materials and design for production will also need proper reconsideration in architectural syllabuses. The relative failure so far of functionalist architecture has resulted from the fact that the architect's field of knowledge has been too narrow to define the human functions of a building adequately. We have had an aesthetic of functionalism instead of buildings that function."

Art in the market place

Sir John Summerson, opening an exhibition at the Royal Society of Arts of winning and commended designs in this year's Industrial Art Bursaries Competition:

" . . . Those of us who are over 50 have witnessed the most extraordinary change in the world of design – a change of which we experienced the beginnings in this country in the late 'twenties (1927 is to me always a key year) and of which we now see the total fulfilment. The change is perhaps best epitomized in the history of a word which I think I am right in saying has almost dropped out of use – 'modernism'. My impression is that the word is so nearly obsolete that if one were to say 'the age of modernism' one would immediately be understood to mean the period roughly between 1910 and 1940, with 'modernism' taking on its sharpest edge in the late 'twenties. 'Modernism' is dead. Nothing today is more 'modern' than anything else.

"It is a formidable thing to have 'arrived'. It can breed boredom and frustration. When everything seems to have been done at least once it is not much fun doing it again; nor is it much fun poking about to discover the odd thing which has not been done. Young designers may sometimes feel that they are living in a 'mainstream' epoch when competence and decent quality are the only available criteria, and when all ways are barred to the spirit which wants to fly high – barred not by some challenging, breakable opposition, but by the cotton-wool 'monoculture' of a world which is rapidly becoming universally middle middle-class.

"This is a situation which enfolds and blankets and deadens a good deal of design aspiration today. What does it demand from the young designer? My answer would be that it demands from him greatly increased intellectual stamina and a greater sense of responsibility for relations of his art to history, to technology, to society. It would be the greatest mistake to imagine that because of the sense of 'arrival' which I mentioned just now, nothing is happening in the world of design. *Something is always happening;* the difficulty at the moment is to see what it is. The man whose intuition can identify the new unities, the new directions (which may not be strictly artistic directions) in a complex situation is the man who is going to lead in the next generation of designers."

Export to EFTA

Dr A. Caress, overseas director, ICI Ltd, speaking about The Newer Fibres in the UK and Western Europe, *when he opened the annual conference of the Textile Institute at Harrogate recently:*

" . . . If we are to get a bigger share in EFTA markets, indeed in world markets, our best chance is to be selective, to specialise in the things we do best, and most economically."

" . . . If Western Europe becomes a free market – and it is likely to do so one day – then the whole of Western Europe will have to be regarded as our home market . . . and if EEC and EFTA and maybe the rest of Western Europe – perhaps even the Commonwealth – are going to merge into an economic unit, it is dangerous to wait until they do so. Don't let us try to place our bets after the 'off'.

"In plain words, if we believe that we shall be part of a United States of Europe one day, in the economic if not in the political sense, we should be planning and mounting a deliberate export offensive on Western Europe as a whole, even although it is hard going while conditions are against us."

Planning the pack

James Pilditch, of Package Design Associates Ltd, speaking in Oslo recently on How to Increase the Sales Appeal of a Package:

" . . . If you want to compete in the large, international marketing battle that is developing, you must recognize that the weapons are changing. Packaging is now a big gun. Today, both the physical aspects of packaging and the graphic ones must command the attention of anyone seriously interested in marketing.

" . . . If you change either you may change not only the 'personality' of the product, but indeed its whole nature. Whoever first put shaving cream in an aerosol changed the nature of shaving cream. He used the package to give the product qualities it did not inherently possess.

" . . . And what about *consumers*? They want packs that tell them quickly and honestly what the pack contains, who makes it, how much it costs. They want packs that protect the product, yet which are easy to open and, if necessary, close and re-open and re-close. They want packs that let them buy the quantity they want where they want it.

" . . . Good package designers are concerned with communication, not art."

Experiment in foam

The nine entries which reached the prototype stage in a new annual furniture design competition sponsored by Aeropreen Ltd were exhibited at High Wycombe recently. Aeropreen manufactures polyether foams, and the aim was to find new ways of using this versatile upholstery material. However, although *Aeropreen* polyether foam sheet is ideally suited to covering forms of compound curvature, none of the award winning prototypes, although extremely competent, achieved any startling innovations in design. The competition was open to students and designers under the age of 35, and the first prize of £300 was won by William Plunkett, a second year student at Kingston School of Art. His design, **1**, used a knock-down construction in bright finished flat mild steel bar with two polyether foam cushions supported on rubberised webbing; the chair was well proportioned and comfortable to sit in. However, the steel arms which formed an integral part of the structure were cold to the touch, and would have been more practical coated with plastics, or finished in another material.

The second prize was awarded to Paul and Dorothy Goble, both former students at the LCC Central School of Arts and Crafts and now practising designers. Their design, **2**, which was similar in principle to the first, used a laminated wood construction. The problem of manufacture was considered carefully, and the preformed sections used for the seat and back were duplicated for the legs. The profiled cushions were also interchangeable. A chaise-longue, **3**, by Geoffrey Callister, graduate at the Central School, gained the third prize.

Ernest Race, speaking for the judges at the presentation ceremony, said that a large proportion of the 98 designs received had not shown a sufficient understanding of upholstery techniques.

His comments again emphasised the need for practical design training, with proper facilities for experimental and development work – a point which was stressed in DESIGN's recent survey of the furniture industry (DESIGN 147/54-61). NIGEL V. WALTERS

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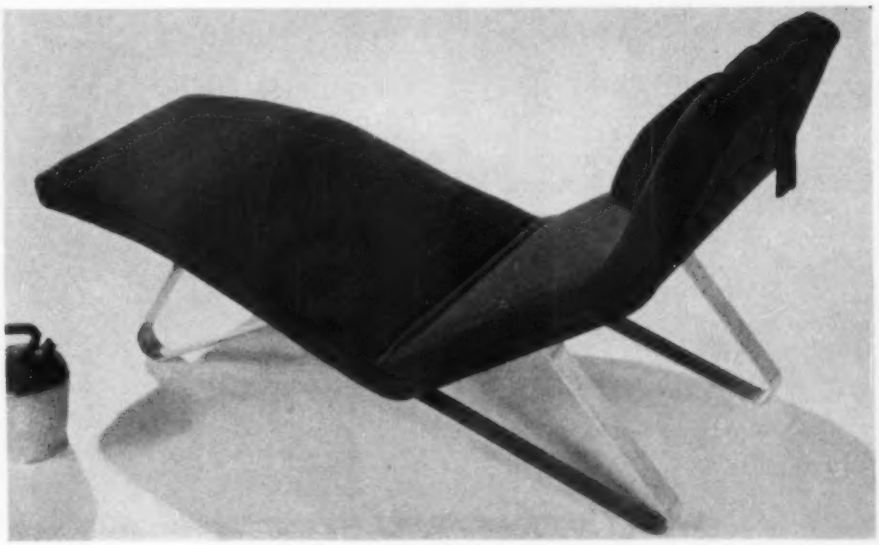
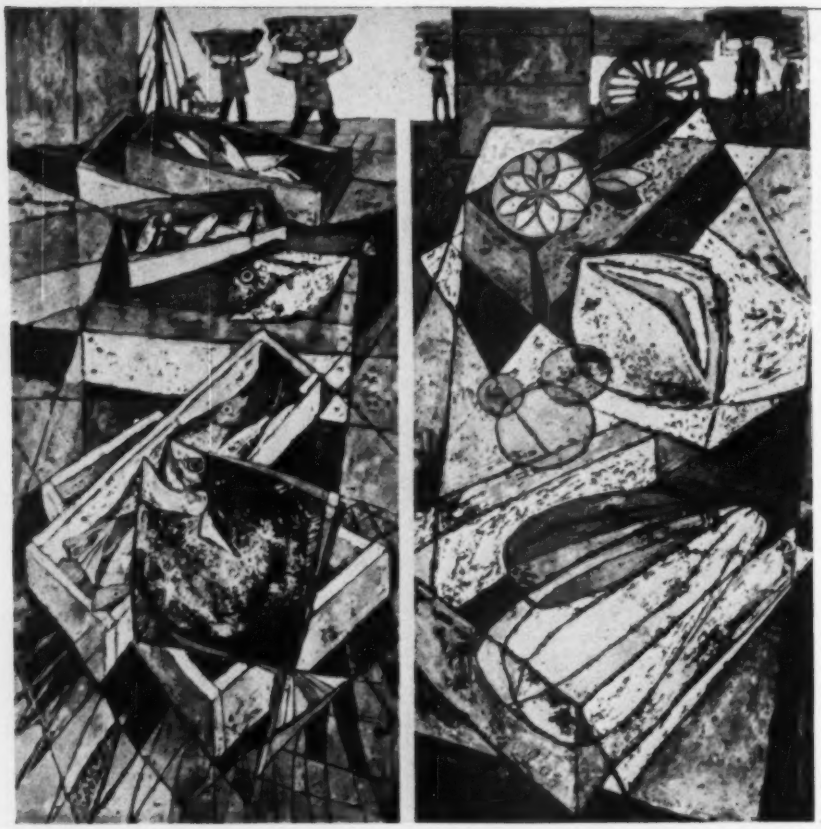
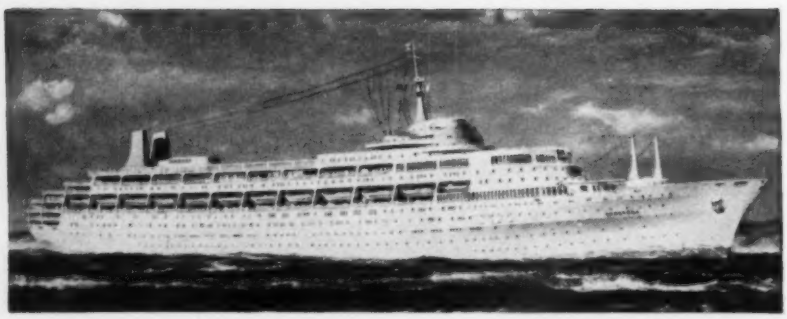
2

3





'Markets', a poster designed for London Transport by Gaynor Chapman. It is one of the series of full colour prints of famous London Transport posters, which includes the work of Edward Bawden, R.A., John Minton, E. McKnight Kauffer, and many others. The average size of the prints is 6" x 5". They can be obtained, price 1s. each (postage 3d.) from the Publicity Officer, London Transport, Griffith House, 280 Marylebone Road, London, N.W.1.



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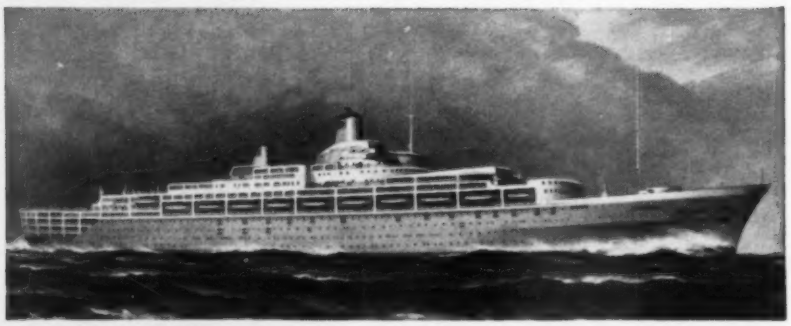


Two new and massive links between the peoples of the Commonwealth

P&O ORIENT LINES

16 COCKSPUR STREET SW1 · 130 LEADENHALL STREET EC3

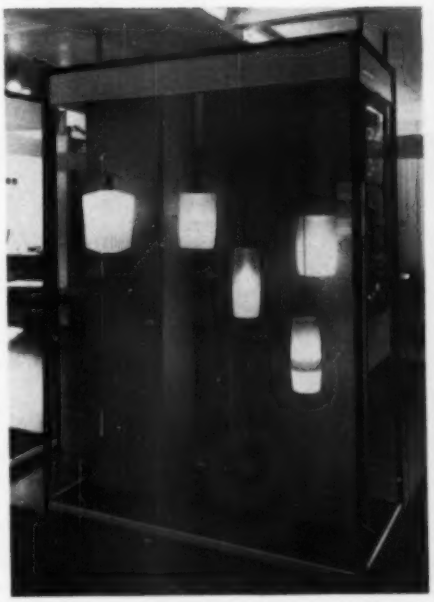
NEW WING

Holmes, a large furnishing store in Reading, opened a new wing recently, and to mark the occasion, the whole of the ground floor extension was given over to a display of goods selected from 'Design Index'.

The exhibition was designed by Robert Heritage, and the products, which included a wide range of consumer goods, were shown in individual displays and in room settings. There were seven of these, including a living room, bedroom and dining room. A customer bought the complete office, FAR RIGHT, on the day the exhibition opened.

Everything on display was on sale in the store, and the management reports very satisfactory results, especially in the sales of china and glass. Holmes carried very little tableware before the new extension was opened, and the exhibition provided the firm with a pointer to the sort of designs people want to buy.

Holmes of Reading is a member of the Good Design Group, an association of retailers which aims to raise design standards in this country. Now that the exhibition is closed, Holmes will still retain its link with The Design Centre, and part of the extension will be devoted to a permanent display of goods accepted for 'Design Index'.



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MISCELLANY

Clash of symbols

The choice of a symbol for Commonwealth Technical Training Week has recently given rise to some criticism: the City and Guilds of London Institute organised a competition among art schools for a suitable symbol, and the first prize went to a design, **1**, by J. Landau, of the London School of Printing and Graphic Arts. City and Guilds, however, decided that Mr Landau's symbol was unsuitable, and used instead a design, **3**, by a gold medallist of the British Federation of Master Printers.

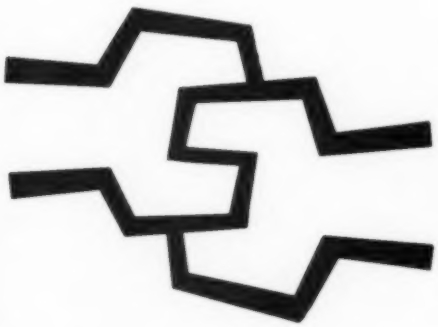
When the posters incorporating the substitute symbol appeared, reaction was immediate and strong. The Society of Industrial Artists, which had provided two members of the competition jury, wished to dissociate itself from the design used. J. Marchbank Salmon, principal, Croydon College of Art, had his college design a house style for the Croydon CTTW incorporating its own symbol, **2**, "thereby replacing the official horror".

It was, of course, never disputed that City and Guilds was under no obligation to use the winning entry. In fact, Mr Landau's symbol was rejected because "the scope of the CTTW was always intended to be as wide as possible . . . The central advisory committee felt that the prize winning designs were not sufficiently broad in concept, and laid too much emphasis on the purely industrial and engineering aspects of the CTTW".

The crux of the matter seems to be in the fact that no time was left for the redesign of the prize winning symbol, should it prove unsuitable; and it was this which led to the choice of one of a set of four symbols, submitted independently of the competition, which happened to be to hand.

Whether the extreme visual confusion of the design used managed to convey any sense of purpose whatever must remain a point for considerable doubt; as a substitute for the clarity and forcefulness of the original, it is a disaster.

1



2

3

Safety at sea

During the last war it became evident that conventional lifebelts and lifejackets were not always effective, since many people wearing them were drowned. Subsequent tests made on an anaesthetised volunteer in a water tank proved that an unconscious person wearing a lifejacket would be likely to drown unless the buoyancy device was designed to be self righting, and to hold the mouth clear of the water.

Now specially shaped inflatable models have been developed to meet these requirements. One design is the *Beaufort* emergency jacket, **4**, made by Beaufort (Air-Sea) Equipment Ltd. This jacket can be inflated by the lungs, or by a CO_2 cartridge, and a device is available that automatically inflates it on contact with the water.

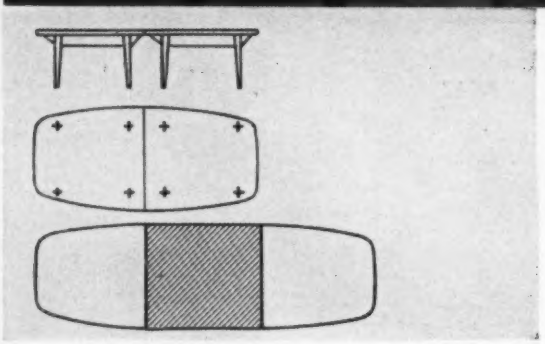
Another new development is the patented *Marksway* range of buoyant clothing, **5**, produced by Quadrant (Sailing) Ltd and several other manufacturers. *Marksway* buoyancy can be built into oilskins and smocks, or supplied as life-saving waistcoats. With the *Marksway* principle, air entering through breathers circulates in waterproof compartments. The breathers are sealed by water on immersion, leaving air trapped in the compartments. The garments are therefore effective as worn, requiring no operation on the part of the user. They do not impede movement and, because of the thermal insulation of the air pockets, they are comfortable to wear in both warm and cold weather. They are particularly suitable for use during water sports.

4

5

Marksway waistcoats are also available with head support. It is claimed that this type has many advantages over the standard Board of Trade lifejacket for passenger vessel use. L. E. WINGFIELD

pause for reflection



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NEWS

RESEARCH

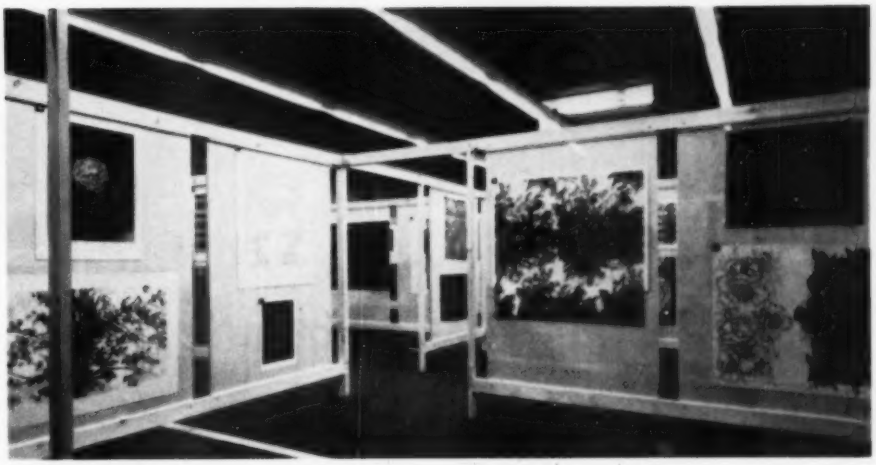
Research for plastics

With the help of a substantial grant from the DSIR, the Research Association of British Rubber Manufacturers is to extend its activities, and to take the new title of the Rubber and Plastics Research Association of Great Britain. Proposals for future work programmes include the standardization of test methods, productivity studies, the purchase of expensive testing equipment for use by member firms, and the establishment of a consumer advice service, which would assess materials on a standard basis. New laboratories for plastics research are being built at the association's headquarters at Shawbury, near Shrewsbury.

Questions about colour research

In the *Pointers* item headed *Questions about Colour Research* (DESIGN 150/45), it was suggested that Faber Birren, the American colour consultant, is associated with Market Investigations Ltd.

It has been pointed out that Market Investigations Ltd is in no way associated with Mr Birren, and we apologise for any inconvenience this erroneous statement may have caused.



Fabrics of the future

House & Garden *magazine collaborated with the Cotton Board in sponsoring a design award competition for cotton furnishing fabrics by artists under 30. This exhibition, held recently at the Cotton Board Colour, Design and Style Centre in Manchester, showed the initial selection from the ideas submitted. The judges chose more than 20 designs which may go into production in the spring of 1962. The exhibition was designed by John R. Burrows.*

APPOINTMENTS

CoID promotion

David Wainwright has been appointed promotion officer to the CoID. A journalist for eight years, he has written (particularly on the arts and education) for a variety of newspapers and periodicals, including *The Times*, *The Guardian*, and *The Evening News*.

Birthday honours

This year's birthday honours list included:

PC: Sir John Vaughan-Morgan, Minister of State, Board of Trade, 1957-59.

Knights Bachelor: George Trenchard Cox, director, Victoria and Albert Museum.

CB: A. P. Pott, chief architect, Ministry of Education.

CBE: L. W. Griffith, vice-chairman, Arts Council; W. D. Lacey, county architect, Nottinghamshire County Council; Carel Weight, professor of painting, Royal College of Art.

OBE: Alison Settle, journalist.

Rediscovering an era

An exhibition of nineteenth century English and French wallpapers shown recently in the London showrooms of the Wall Paper Manufacturers Ltd. The display was designed by the Conran Design Group.

Designs on drink

Milner Gray, senior partner, Design Research Unit, has been appointed design consultant to Wilson's Brewery Ltd (Manchester), Phipps Northampton Brewery Co Ltd, and Ushers Wiltshire Brewery Ltd (Tonbridge); all three are members of the Watney Mann group. Watney's own house style, already well established, was also designed by Mr Gray (DESIGN 139/40-41).

Factory project

The Conran Design Group, which last year undertook the design of three canteen and dining room projects for Gillette Industries Ltd (DESIGN 145/61), has now been retained by Gillette for two major projects at its Isleworth factory. The group is preparing designs for rebuilding the main entrance hall, and it is also in charge of plans for a new canteen block for the Isleworth factory (this will include a theatre, cinema, rest rooms and refreshment areas).

In the chair

L. Rotherham, member for research, Central Electricity Generating Board, has been elected chairman of the British Electrical and Allied Industries Research Association.

D. G. Stokes, sales director, Leyland group, succeeds the Hon Geoffrey Rootes (deputy chairman and managing director of the manufacturing division of the Rootes group) as president of the Society of Motor Manufacturers and Traders.

J. K. Warrington, managing director, Doulton Fine China Ltd, has been appointed president of the Pottery Manufacturers' Federation.

Festive men

A *Commonwealth Arts Festival* is to be held in this country in 1964, and the Commonwealth Arts Festival Society Ltd recently announced the names of the directors and members of the advisory council which will be planning the events. Sir Gerald Barry and Robin Darwin are among the directors; the members include Paul Reilly, Sir Hugh Casson and Sir William Holford.

MISCELLANEOUS

Souvenir of the Centre

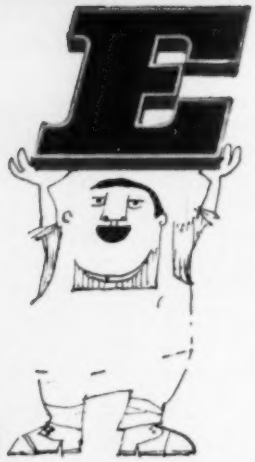
The Design Centre Book will be published next month, and will contain fully illustrated information about products shown in The Design Centre, and represented in 'Design Index'. It is edited by Stephen Garrett, and the art editor is David Collins. Copies will be available, price 3s, from S. J. Enright, CoID, 28 Haymarket, SW1 (postage 9d extra).

Animal farm

Plans to house the animals in London Zoo in architect designed surroundings were first announced in 1959, and the Zoological Society has recently issued a progress report.

The Armstrong-Jones aviary will be only one of many new buildings by a distinguished galaxy of designers. Sir Hugh Casson and Neville Conder are working on an elephant house, which should be completed by 1962. Professor Misha Black has been given the intricate task of designing a small mammal house. This involves complex research into small mammal habits – some fly, some jump and some are only active at night – so considerable planning is involved in seeing that both visitors and animals are kept happy and alert. In the meantime

continued on page 77



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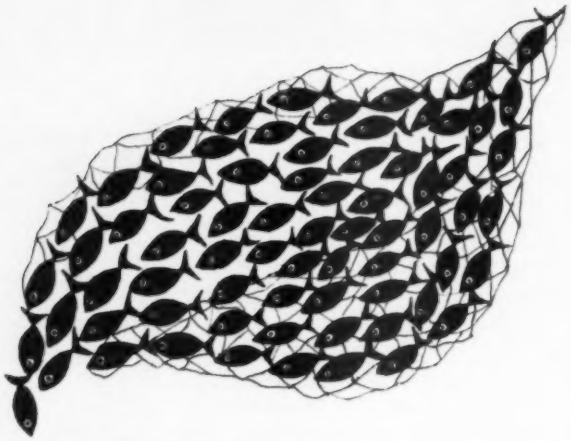

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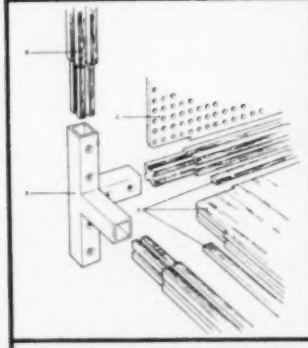

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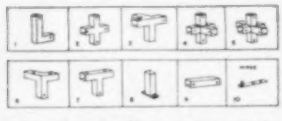

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the new service building is now completed, and the landscaping of the gardens and the canal banks is in progress.

Printers merge

Balding & Mansell, the printer, has merged with the Universal Printers, a group consisting of Bemrose & Sons Ltd, Alf Cooke and Norbury Printers. Balding & Mansell, which printed DESIGN for six years, will continue to operate independently, with the same staff and management, but the firm will be able to draw on the technical resources of the whole group.

London lowlands

Helen Dubens Artware Ltd has opened a new London showroom, the Netherlands Design Centre, in Kensington High Street. Dutch gift ware, including pewter, copper, glass and enamel, is on show but not on sale. The centre arranges for the import of the goods for retailers and tells members of the public where they can be bought. It is promoted by the Netherlands government, which does not, however, provide financial support.

China in Jamaica

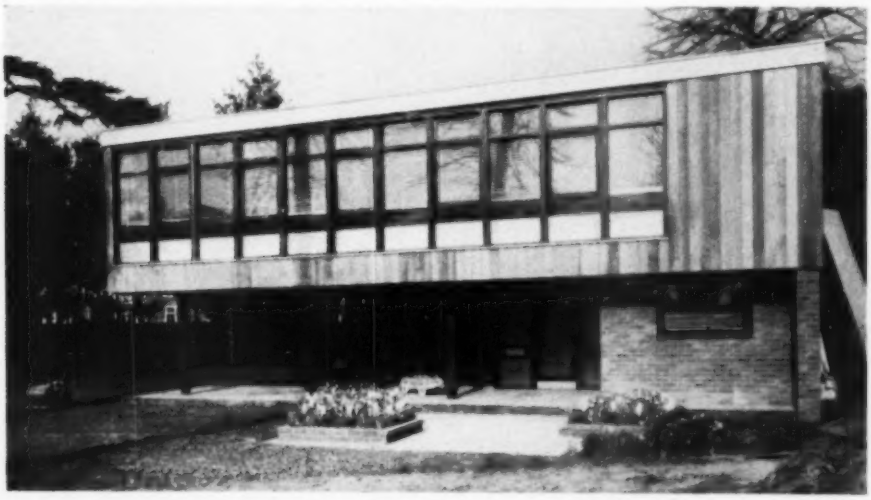
A subsidiary of the Worcester Royal Porcelain Co Ltd has set up an experimental pilot plant in Jamaica to produce chinaware, ceramic test pieces and glaze compositions. All decorations used on the pottery will depict Jamaican and West Indian art forms; Worcester Royal's design director, R. W. Baker, recently visited Jamaica to explore its design potential.

New directions in foam

Microcell Ltd, a member of the BTR group of companies, has recently launched a new polyether cushioning material, *Crestafoam*, which is designed to meet the demands of the upholstery, bedding and automobile industries. This flexible, micro-cellular foam will be available in four grades of softness.

Flexible living

This year Ideal Home *magazine has chosen this house at Hampton as its* House of the Year. *It was designed by its owner Charlotte Parker, an interior designer, with Kenneth Wood, the architect. Inside there is an L-shaped living area which can be divided by a system of movable panels into six separate rooms, so that the interior plan can be altered to meet the family's requirements over the years. The house is in Upper Sunbury Road, Hampton, Middlesex; it was built by Hampton House Development Ltd, and is open to the public until November 15.*



LETTERS

Washing machine analysis

Sir: It is an encouraging indication of the way current thinking is developing that a magazine such as DESIGN should concern itself so deeply with the mechanical aspects of the Parnall *Spinwasher* (DESIGN 151/61-67). It is unfortunately true that stimulus has been given in recent years to fostering the impression that 'design' means appearance, and has no technical significance. It is also true that whereas the potential purchaser may readily form his own conclusions on the appearance of a product, he has little way of knowing anything about the inside until after he has bought it. DESIGN is in a unique position in being able to analyse design in the complete sense, and whereas few would criticise its authority on visual matters, an extremely objective and comparative technique must be used when assessing function and performance. Great attention must be given to presenting opinions as opinions and not as fact, for here the purchaser cannot temper the criticism with his own observation.

No useful purpose is served in going over in detail the points in the analysis on which we disagree – on only one point would we like to comment. If you agitate wet clothes in a basket empty of water you will almost certainly damage them. We thought everyone knew this – we see we were wrong.

Generally, however, the article presents a very fair assessment of the machine itself. If we were to criticise these analyses it would be for their subjective market research approach, their failure to separate the particular from the general, and their failure to present the credit side. As an example, it is true, as was pointed out, that a single tub machine must take longer to wash a multiple load than a twin-tub machine, where two functions are being carried out at the same time. If the week's laundering is concentrated in one day, as is the general custom (based on traditional methods and equipment), we believe that it can be done with the *Spinwasher*. The time taken from start to finish will be longer, but the time spent standing in front of the machine and doing the work will be shorter; near boiling-hot dripping clothes need not be conveyed from here to there, and the rinse will be better than a rinse in the spin basket of a twin tub.

The Parnall Spinwasher (*see* Washing Machine Analysis).

However, with a fully automatic machine, one wash cycle, including heating the water may take as long as 90 minutes. If the machine is combined with a heat dryer, from dirty laundry in to fully dry clean clothes out may take about 2½ hours. The present owner of a twin-tub may raise her wet hands in horror and declare she will never buy an automatic, but humans are adaptable as well as machines. An automatic washing machine is an expensive piece of equipment and should not be idle six days of the week; it should be made to work almost daily. A little thought will show that this is the sensible routine. The housewife has no concern for the time taken by the machine; she has spent only one minute each day in loading, and may not even be in the house while the wash takes place. But with an automatic machine there should be no arranging or fitting up to prepare the machine for use. It must be laundry in, press button and leave.

In the design of the *Spinwasher* we considered that we were paving the way to an automatic. The mini-

continued on page 79

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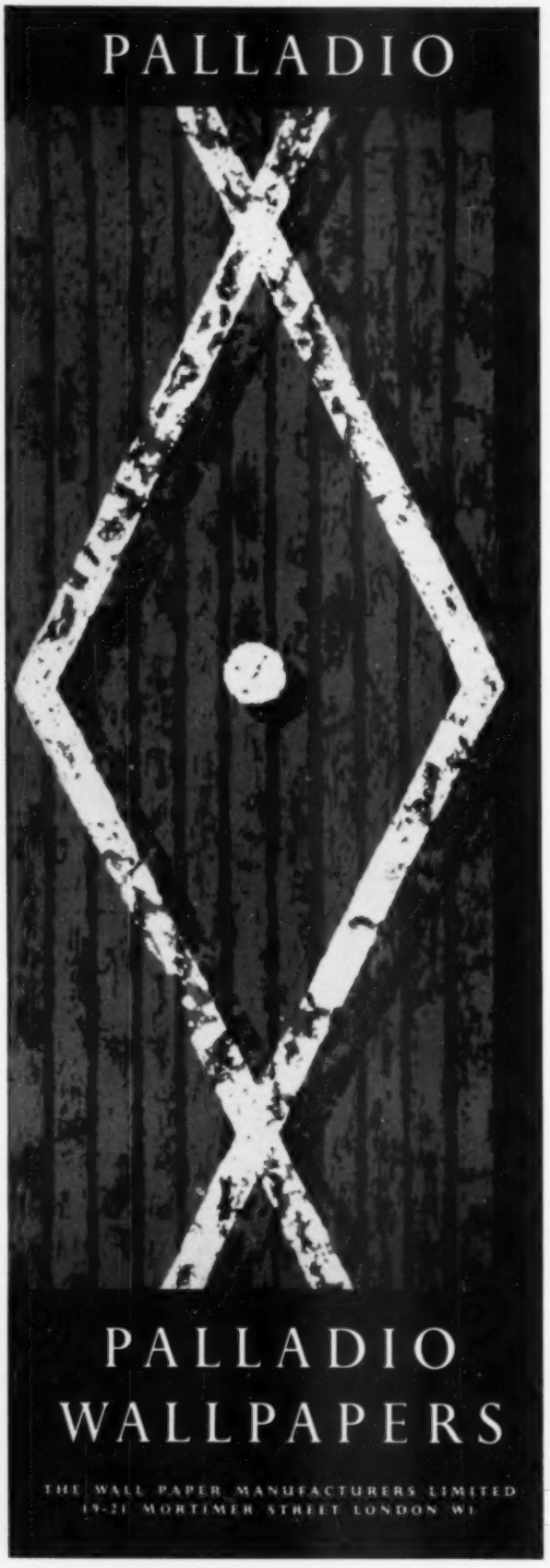

mum of preparation is necessary and its *modus operandi* encourages daily use. We would not be so unwise as to attempt to tell the housewife how she should do her washing, but one thing is certain: when fully automatic machines really come, they will come to stay and that will be the end of the Monday marathon.

Armchair designing is a pleasant occupation and can be useful in broadening thought. It must not be taken too seriously, as it is equally as possible to lose sight of the trees as the wood. Manufacturers are usually well aware of the lack of perfection in the products they make. Design and compromise are almost synonymous, and particularly is this so in a field where cost is so important. There is an opportunity ahead for intelligent complete design criticism – it would be a pity if the opportunity were missed through a rather flippant assumption that manufacturers give no thought to consumer needs and a facile too-subjective viewpoint.

A. R. B. DOW
Chief designer (Parnall Products Ltd)
Electrical Division of Radiation Ltd
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Training for designers

DESIGN *invited comments from art school teachers on the article* Two Courses for Students (DESIGN 148/49-52).

Sir: Everyone concerned with the training of industrial designers for the engineering industries will welcome your initiative in promoting an exchange of views on this subject.

This aspect of design, as a separate profession, is relatively young, and, being still in the process of development, it would be unwise for anyone, at the moment, to claim anything more than a partial solution to the problem of training. Experience is being gained in schools with radically different approaches, and this experience must be shared. As a first step, the publication of syllabuses is interesting, but to be of real value these should be capable of being compared with existing courses. In order to do this, however, more information must be given on the relative importance attached to the subjects which are included – in other words, one does not want a syllabus so much as a timetable.

For example, although I consider J. Christopher Jones's course to be admirable, I doubt whether it is realisable within the normal three years and in the terms he has stated. These terms include the introduction of "rigorous theoretical knowledge of a kind that will become essential to successful application but which cannot be learnt on the job. This ... gives the students the immense advantage of fundamental knowledge that will give them a grasp of any situation which they may afterwards encounter". This is an impresive aim and becomes more so when one looks at the subjects included and finds listed in *one* of the sub-sections, anthropology; sociology; physiology and psychology.

In compiling a timetable one has to face the reality that while an exhaustive range of subjects can be taught, there is a real limit to what will be learnt – learnt, that is, in the sense of an assimilation and understanding of the subject rather than the mere collecting of lecture notes.

A depth of understanding is a necessity for the designer, whose eventual strength will lie not so much in his theoretical knowledge, valuable though that may be, as in his basic convictions about design. These convictions can only be developed by experiencing the mixture of failure, frustration, self-criticism, self-realisation and growing confidence and success which is involved in designing things. Inevitably this absorbs a large part of any course. If a generous margin of time is not allowed for the business of wrestling with and overcoming design problems, there is a danger of producing perceptive and well informed critics, but not designers. The gulf which lies between the acquisition of knowledge and taste and the acquisition of the positive qualities of the executive designer is large, and is invisible until one has tried to cross it.

At the Royal College of Art, about half the students' time is spent on design projects and the remainder of the time is devoted to the ancillary subjects, some of which are dealt with as fully as possible, while others, less important, are treated in an introductory way as a basis for further study. At the same time, the students are encouraged to develop qualities of initiative and self-reliance in the gathering of information so that the deeper pursuit of any of these other subjects should be within their capacity.

With so much pressure on the students' time it becomes necessary to treat the lecture courses in the most concentrated and economical way possible. At the Royal College of Art we have come to the broad conclusion that borrowing from traditional syllabuses of related courses (eg, the Mechanical Engineering Ordinary National Course) gives too much detail and emphasis in certain directions which are

continued on page 81

Memorial

Primavera (London) Ltd recently held a memorial exhibition of textiles designed by Françoise Lelong. This young French designer died recently at the age of 36; her work was well known in this country, where manufacturers such as Edinburgh Weavers, Heal's and Donald Brothers have been using her designs in their collections for several years. This net, Canetille, *was designed in 1960. Its architectural quality is ideal for large window areas and, like her other designs in this medium, it has that sense of scale that is lacking in so many modern nets.*

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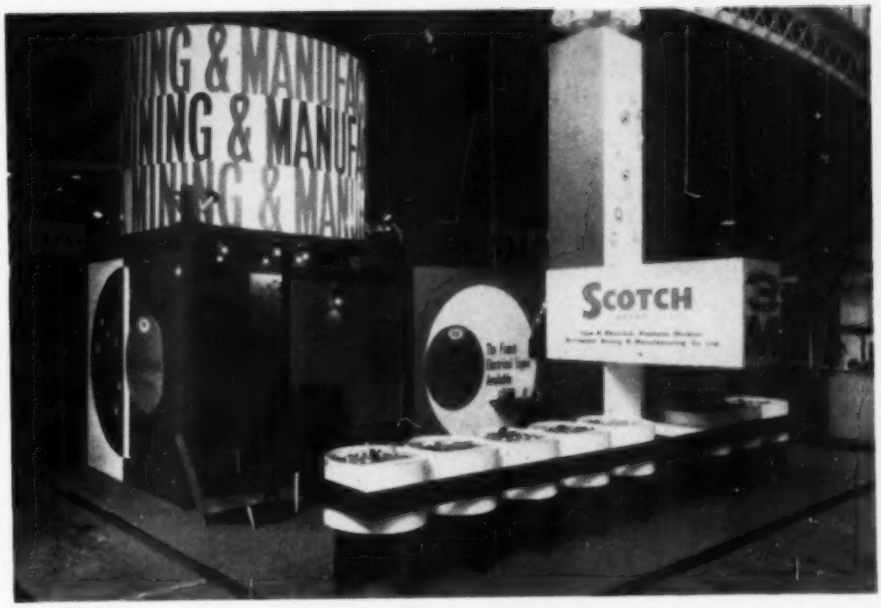
irrelevant to our needs. Not only does this waste time, but it means that the various specialist subjects are treated fragmentarily rather than as component parts of a new field of study. What is needed is a reappraisal of these technical subjects, editing and presenting them to meet the needs of industrial design students. In this way, one hopes a course will be developed which treats industrial design as a specific branch of engineering in its own right, rather than a diffuse amalgam of other disciplines.

Finally, returning to Mr Jones's course, I must protest at the modesty of his aims: "to enable students to take an immediate and useful part in the work of a design office . . . and to enable students to adapt to modern trends that may arise after they have left college" etc. These aspirations are very desirable, of course, but beyond these aims of professional competence one would like to see a more inspiring idea, invoking a sense of personal responsibility and leadership in the technological society to which the students are committed, and in the industries of which they will have the privilege of representing essentially human values.

FRANK HEIGHT
Royal College of Art
Western Galleries
Imperial Institute Road
London sw7



Scotch reels

This stand for the Minnesota Mining and Manufacturing Co Ltd was designed by Brian Harrington of Cockade Ltd. It was one of the liveliest exhibits at the Radio and Electronic Components Manufacturers' Federation Exhibition, *held at Olympia recently, and was built by Harris Displays Ltd.*

Cultural fundamentals

Sir: The developing ideas on advanced courses in art schools and colleges, particularly in relation to the comparatively new sphere of industrial design (engineering), are tremendously interesting and exciting, but before we rush headlong into the pitfalls of novelty and commercialism let us remember that it is education that we are considering.

We hear much regarding the replacement of the artistic, craft based approach by one that is scientific and technical, and our vocabulary increases daily with wonderfully new descriptions of what we have done before under lesser titles; but we hear little regarding the real subtleties of training the first rate designer.

By all means let us agree that art schools are traditionally untidy places, and that High Business is now the master and patron of our arts, but let us not become so infatuated with current trends, fashions and techniques that we tidy really creative design out of existence.

Let us for a moment forget about such things as ergonomics, economics, anthropology, sociology, physiology, psychology and so on, and think about the very ground on which we are building. All these aspects are naturally taken into account in any good course, but once we make a formula out of them the whole structure falls apart, and we are back once again producing the hackneyed work that we have already seen too much of.

What really makes for sound education, surely, is the depth of the course itself, and not the trimmings. If the student can first be given something on which to build in the way of aesthetic understanding, can really be taught to draw in such a way that it becomes his natural language, and can really be taught to develop personal discoveries in form and colour, then and only then can creative abilities flourish and gain further nourishment.

Good design surely depends much on the cultural standards of the day. Fine art can still be the fundamental basis of all training, coupled with the disciplines that each aspect of design poses, but not if we skate over the surface.

I give these comments not in any way as criticism of your former excellent articles on industrial design, but as a plea for things that could easily disappear completely to the detriment of the future.

ERIC TAYLOR
Principal
City of Leeds College of Art
Vernon Street
Leeds 2

Frustrated engineer

Sir: The article on two courses for students (DESIGN 148/49-52) comments on the need for engineers with what I suppose should be called a 'flair' for design. You could not be more right. I am an engineer, I have my HNC in mechanical engineering and am at the moment engaged in earning those quite exalted letters GradIMechE. After seven or eight years' hard work, I shall have these generally recognised qualifications for a reasonable theoretical engineer. I studied on the 'part-time day release' system like many others, and now my firm will want to use my ability: it has already contributed greatly to my education, and it would hardly be fair to ask for one year's full time study at an art or design school to improve my thoughts on the right shape an article should have. But through all the years I have studied there has not been *one sentence* urging any thought on the art of design as opposed to the purely mathematical approach. In this way the Ministry of Education has encouraged the traditional rugged and uninspiring shapes of British industrial appliances (see the machine shop scene in DESIGN 148/43). These machines work, but they look like experimental prototypes.

It is a great pity that Mr Jones' ideas (or some at least) were not incorporated in some measure in the Higher National Courses in Engineering.

MALCOLM MCVEY
22 Lucas Road
High Wycombe, Bucks

Kitchen space

Sir: The note *Analysis in Depth* (DESIGN 149/39) was of interest to us because a BSI committee is at present considering the layout of domestic kitchens and the sizes of the equipment that goes into them.

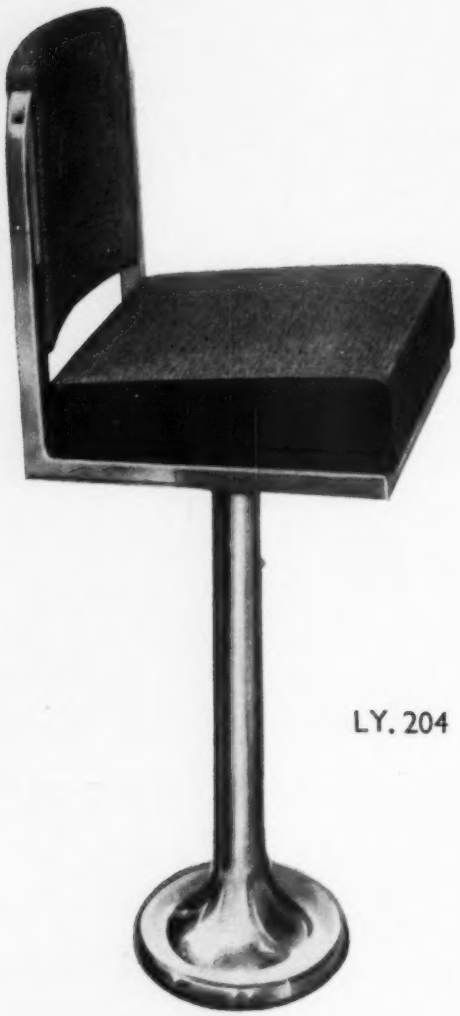
One of the objects of this work is to ensure that freedom to choose appliances, such as cookers, refrigerators and washing machines, for their suitability, should not be restricted by lack of space to accommodate them. The problem is far from easy of solution, because the range of equipment is very great, and its complex nature makes changes of pattern extremely costly. Nevertheless, the manufacturers on our committee recognize the desirability of co-ordinating dimensions in some way. It seems probable that recommendations will be made as to the sizes of the spaces to receive equipment rather than for detailed dimensions of the individual appliances and other items.

It may not be possible, or even desirable, for

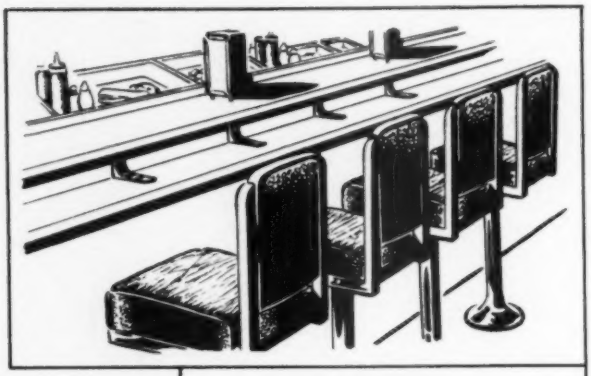
continued on page 83

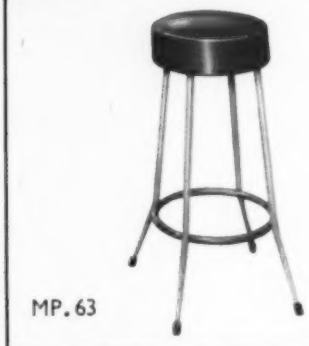
du·al

METAL FURNITURE



LY. 204





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every appliance to line up with its neighbours in the kitchen, but a recommendation as to the distance of the front from the wall would enable a decision to be taken on whether to conform or not.

It is too early to say what dimensions may be suggested, but it has already become clear that those in BS 1195: *Kitchen Fitments and Equipment* may have to be reviewed. It would not, therefore, be wise for manufacturers to be in too great a hurry to relate dimensions to this standard.

C. DOUGLAS WOODWARD
Press and Public Relations Officer
British Standards Institution
2 Park Street
London w1

Sore thumbs

Sir: I was very interested to read the recent *Product Development* article devoted to the Kenwood food mixer (DESIGN 148/64-68). Wishing to acquire a food mixer, my wife and I recently carried out intensive market research on the products available.

The Kenwood *Chef* was certainly an attractive proposition, and we very much admired the clean lines of the basic design. However, after seeing the various attachments demonstrated, we thought that, while the two re-designed by Kenneth Grange were attractive and functional, the existing fittings when in use stuck out like the proverbial 'sore thumbs'. They were complicated to operate, cumbersome to handle and difficult to clean, and their appearance left very much to be desired. Their position on the new mixer unit was certainly detrimental to its appearance, and it was obvious that the sales staff demonstrating the equipment thought so too.

If Kenwood really wants to get into the overseas market, the sooner it redesigns the remaining 10 attachments the better.

PS What did I buy eventually? A Braun!

JOHN SHELDON
Munce & Kennedy
Chiron House
10-11 Bulstrode Place
London w1

Something for the workers

SIR: When will DESIGN acknowledge the existence of that body of men responsible for at least 75 per cent of new design – the engineering draughtsmen?

On hearing the terms 'industrial designer', or 'product designer' or 'design consultant', most draughtsmen (metaphorically) spit. The pretentiousness of a journal which will devote a paragragh to a longhaired, sloppily attired, sycophant who designs, say, a bottle or a door handle, is a constant source of irritation to the draughtsman. The latter, day in, day out, is engaged on the design of such details as a small part of his normal work.

I do not claim that all draughtsmen are, of necessity, good designers, but it should be borne in mind that at least seven years' training is needed to produce a good draughtsman, whereas anyone may take a short course in 'industrial design', and call himself a designer.

The average draughtsman does not look for eulogies for doing that for which he is paid, but it would be no more than justice for your journal to make at least some reference to the largest body of designers, with whose work we all make contact every hour of every day of our lives.

C. THOMSON
Accles & Pollock Ltd
Oldbury
Birmingham

Exhibiting building

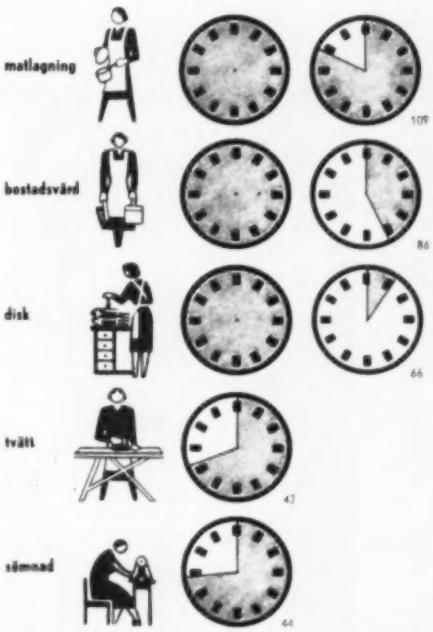
J. Lohman designed these displays for the new showrooms of British Building Supplies Ltd as a result of a recommendation by the CoID's Record of Designers. H. H. Crabb, managing director, comments: "We feel that he has handled this difficult subject most successfully. No other builders' merchant has given such consideration to good display and design".

BOOKS

1000 housewives on housework

Konsument Institutet Meddelar, Statens Institut för Konsumentfrågor, Rålambsvägen 8, Stockholm K, Sweden, 10 Kr. How much of a housewife's day is spent in cooking, housework, washing up, laundry, sewing? Which does she enjoy most? Is she satisfied with her equipment, and how could it be improved? What is the routine of work in the home? Do housewives with a job employ different methods and equipment from the stay-at-homes?

In Sweden, detailed information has been collated about how housewives work and what they find right and wrong with home equipment. A cross section of 1,000 families, all with children of school age or under, were interviewed and asked to keep diaries for one week of exactly how they spent their time. The results have been published by the Swedish Institute for Consumer Research (Statens Institut för Konsumentfrågor) in a book called *1000 Housewives on Housework* (*1000 Husmödrar om Hemarbetet*).



This diagram, one of many in 1000 Housewives on Housework (*see below*), *shows the number of minutes a day the average Swedish housewife spends on various tasks. For example, she spends 1 hour 49 minutes cooking, 1 hour 26 minutes cleaning, and 1 hour 6 minutes washing up. The information was collected by the Swedish Consumer Institute, for a survey on how housewives work.*

The results are fascinating and often surprising. The average Swedish housewife finds cooking the most enjoyable part of keeping house, although her menus are singularly unimaginative – she usually dishes up sausages, meatballs or fried salt pork.After cooking she likes sewing best, and spends over five hours a week making clothes for the family. She is almost sure to have a sewing machine (91 per cent), probably a vacuum cleaner (85 per cent), maybe a refrigerator (56 per cent), but she is unlikely to have a washing machine (19 per cent). Strangely, a housewife with a full time job was found to have almost exactly the same equipment as one who stays at home, and perhaps more surprisingly she does not make any more use of ready prepared foods. Most Swedish housewives do home baking and preserving, and many consider their kitchens badly planned.

A knowledge of home conditions, habits and preferences is of enormous value to designers and manufacturers, and the only way to find out what consumers really need. Sweden is way ahead of us in this kind of work. For although many of our manufacturers carry out extensive market research before designing and launching a new product, their eyes are firmly fixed on the sales graph. Pre-marketing tests eliminate the likelihood of a technical fault, and the standard of performance in home equipment is generally high. Its weak point is too often in convenience of use, for manufacturers have found (who can blame them?) that flashy styling or a new

continued on page 85

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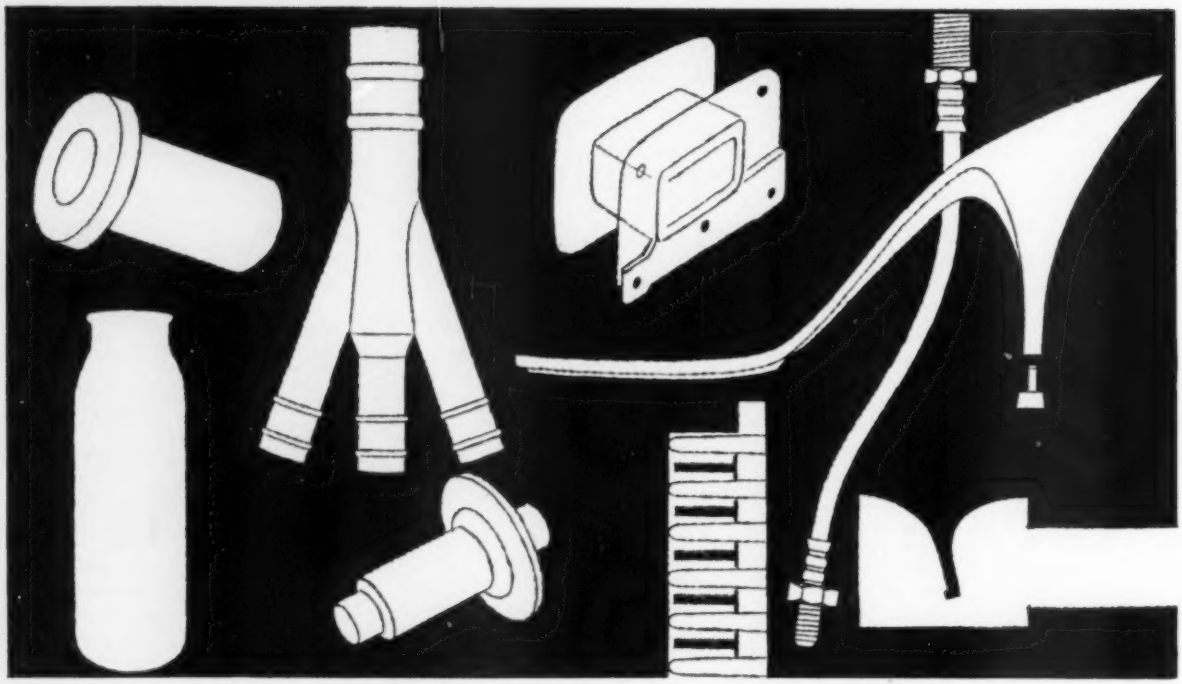

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gimmick is often a better boost to sales than the less tangible attention to practical detail. "Here it is", the manufacturer says now, "and we can persuade you it's what you want". But with the backing of such basic research as has been carried out in Sweden, consumers could put the horse firmly in front of the cart and say: "This is what we need: please make it".

DOROTHY MEADE

Better offices

Institute of Directors, 12s 6d

Over three million people work in offices, and there is increasing interest in their welfare and efficiency. The passing of the *Offices Act* of 1960 will undoubtedly emphasise this trend.

Little information is available to the non-specialist about offices; *Better Offices* is an attempt to fill the gap. The material in it comes from experts in each particular field, and the book has been compiled by a committee of the Institute of Directors under the chairmanship of Peter Trench, director of the National Federation of Building Trades Employers. Siting, planning, heating, ventilation, lighting, noise, furniture, fittings, maintenance, fire, accidents and the creation of a new building are among the main topics considered.

The individual sections are full of useful information, clearly presented and well laid out. Once or twice contributors venture into technicalities that any developer or lessee would be well advised to leave to experts, but the technical knowledge assumed is not generally beyond what might reasonably be expected of a good office controller. Among the points covered are the prices to be charged for canteen meals, the legal responsibilities of landlords and the contents of the first aid box. (There is, however, no index by which these details may readily be found.)

Bins change hands

The Gallante B *wall mounting litter bin, one of the diploma winning designs in the recent CoID litter bin competition* (DESIGN 144/38) *is now made by Norman & Sons Ltd.*

While the individual chapters are informative and accurate, the book, considered as a whole, seems somewhat out of balance. It approaches its subject mainly from the point of view of new buildings, but only a large office nowadays can justify the erection of a new purpose-designed building. Other organisations must share rented accommodation, or perhaps make the best of what they already have. Their problem is to assess the merits of existing buildings offered to them and to devise schemes for the better utilisation of rooms they occupy or expect to lease. There is, however, only a very small section in the book on adaptation, with no illustrations, and even partitioning receives fairly scanty treatment. The maintenance and cleaning of offices is mentioned only in passing. The section on furniture and fittings, by Dorothy Meade, is also disappointingly small, amounting to only 17 pages out of 150.

The field of office furniture and equipment is of course wide, and within the space allowed her Mrs Meade has covered it well. She rightly devotes a good deal of attention to the dimensions of office furniture and over half the illustrations are of chairs of one sort or another. She calls attention to the vast amount of unsatisfactory office furniture on the market, but her point might well have been driven home by a wider choice of illustrations, showing the various types of desk now available from the better manufacturers and perhaps some poor equipment too, as a warning of the pitfalls to be avoided. Some of the illustrations in other specialist sections of the book could indeed have been used as a warning against outmoded and badly designed furniture, which is to be seen on several pages. Little is said about the principles of office layout and nothing at all about the treatment of rooms using specialist equipment, such as accounting machines, calculators and ADP installations.

In spite of these shortcomings, the book is a brave effort and well worth the attention of any office manager. Perhaps the second edition, which will surely be required, will provide an opportunity to correct the lack of balance, and to add the index and stiff cover that are indispensable in any reference work.

HAROLD GLOVER

Kultura bydlení a odívání

Editor-in-chief Jindřich Švec Ustav, bytové a oděvní kultury, Prague

The Institute of Home and Fashion Design in Prague, founded two years ago to stimulate the interest of the Czechoslovak public and industry in improving standards of design of consumer goods, is now issuing a magazine to further these aims.

The title reflects the twin concerns of the institute, and the first two numbers of what is initially to be a quarterly follow suit. But the ground covered is quite wide, and the articles range from discussion of aesthetics in industrial design and of colours and fabrics for interiors, to consideration of flatware, illustrated by some interesting native designs, and of the possibilities of plastics. There are also reports on current design abroad, including references to Britain, and a close-up of Finnish work.

This is a useful addition to publications that illuminate progress and thought overseas.

BERNARD ORNA

This month's cover

This month's cover was designed by George Daulby, 33, who until recently combined freelance practice with teaching, first at the LCC Central School of Arts and Crafts, and then as tutor in graphic design

George Daulby

at the Royal College of Art. At present he is working as a freelance designer with BDMW Associates, where his clients include Balding & Mansell Ltd, Knoll International Ltd, Martini International, Rostrum and Security Patrols.

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Brian Asquith; Ian Auld; R. W. Baker; Baron Bercott; Professor Misha Black, OBE, RDI, MInstRA, FPSIA; John Bridger, DesRCA, MSIA; Ronald Brookes, FSIA; John R. Burrows, MSIA; Geoffrey B. Callister; Sir Hugh Casson, RDI, MA, FRIBA, FSIA; Neville Conder, FRIBA, FSIA; Conran Design Group; George Daulby (cover); Design and Industrial Styling Co Ltd; Colin Forbes; Paul & Dorothy Goble; Milner Gray, RDI, FPSIA; Bernard Harrington, MSIA; Robert Heritage, FSIA; Robert Jefferson, DesRCA; David Kindersley; Jock Kinneir, FSIA; J. Landau; J. Lohman, MSIA; C. Melville Cass; Charlotte Parker; William Plunkett; Ernest Race, RDI, FSIA; Martyn Rowlands, MSIA; Sir Gordon Russell, CBE, MC, RDI, FSIA; Gaby Schreiber, FSIA; B. Smith, MSIA; Herbert Spencer, FSIA; Reynolds Stone, RDI; Keith Tuckey, MSIA; Robert Welch, DesRCA, MSIA.

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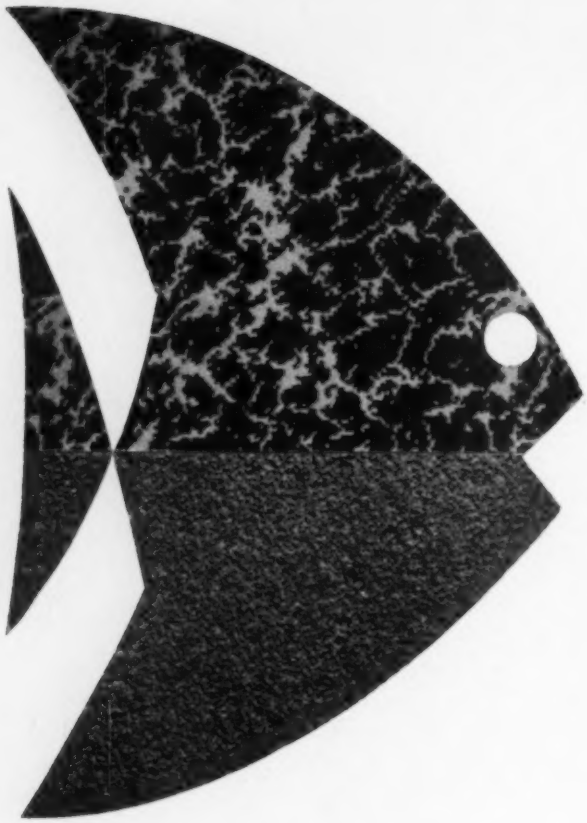

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Senior Lecturer in Design – School of Fine Art. Applications are invited for the above-mentioned position. The appointee will be required to lecture in the Relation of Art to Industry, Principles of Industrial Design, History of Design, and to teach either Product Design or Furniture or Commercial Design; he should be a well qualified practising Designer, preferably with industrial experience. The salary will be at the rate of £1,750 per annum, rising to £2,000 per annum. Commencing salary will be in accordance with qualifications and experience. Approved fares to Christchurch will be allowed for the appointee, his wife and children. In addition removal expenses will be allowed within specified limits. Further particulars and information as to the method of application may be obtained from the Secretary, Association of Universities of the British Commonwealth, 36 Gordon Square, London wc1. Applications close, in New Zealand and London, on 31 August, 1961.

SERVENTI Design Group require assistant architectural designers for work on varying interiors of high contemporary design approach. Good speedy draughtsmanship coupled with the ability to handle and develop interior shopfitting details, and to carry a project from inception to completion most essential. Apply Anthony Garner, Serventi Design Group, 61-3 Beak Street, London w1. GER 7414.

PETO SCOTT. An excellent opportunity exists for an imaginative industrial designer/stylist of proven ability. He will be responsible from the initial design to the final execution of Radio and Television Cabinets, and electronic instruments. The applicant should have worked in the Design Office of a major Company and must be thoroughly familiar with production technique involving plastics, wood and metals. Apply Personnel Officer, Peto Scott Electrical Instruments Ltd, Addlestone Road, Weybridge. Telephone: Weybridge 4271.

COCKADE needs an exhibition designer to augment their team. Experience in associated fields, ie interiors, graphic or display design would be an advantage, and applicants should be between 25-30, L or MSIA preferred. Telephone southall 5678/9 for an appointment.

PARTNER(S) sought to launch retail business: Domestic furnishings, fittings, decoration; interior advisory service. Ability to produce perspective sketches desirable. Box No 527, Design, 28 Haymarket, sw1.

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STAINED GLASS Window Artist, Australia. Leading stained glass window company requires artist for senior position. Qualifications required: (1) Diploma or equivalent with preferably 5-7 years in the profession. (2) Practical experience in production of stained glass design and full size cartoons. (3) Sound knowledge drawing, especially human figure. (4) Design in ecclesiastical stained glass for all styles and denominations of churches. Appointment would be in Melbourne and salary subject to negotiation ranging up to £A2,000 per annum. Apply in writing stating qualifications, general experience etc to: London Manager, Email Ltd, 1 Regent Street, sw1.

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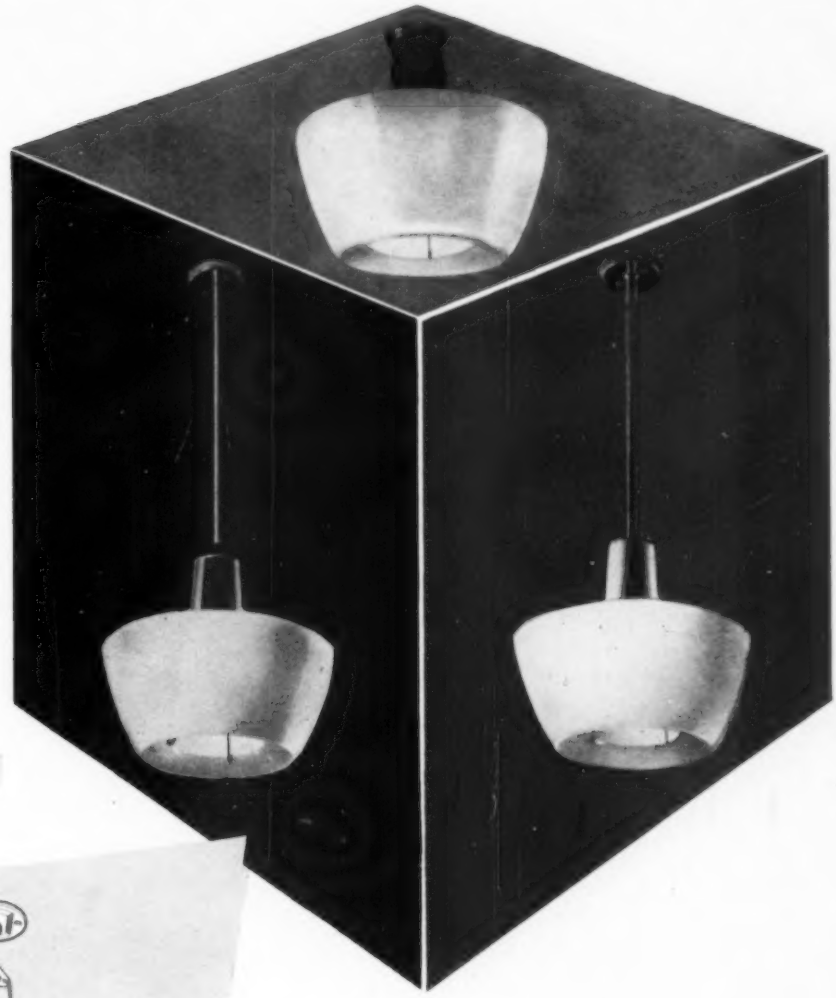

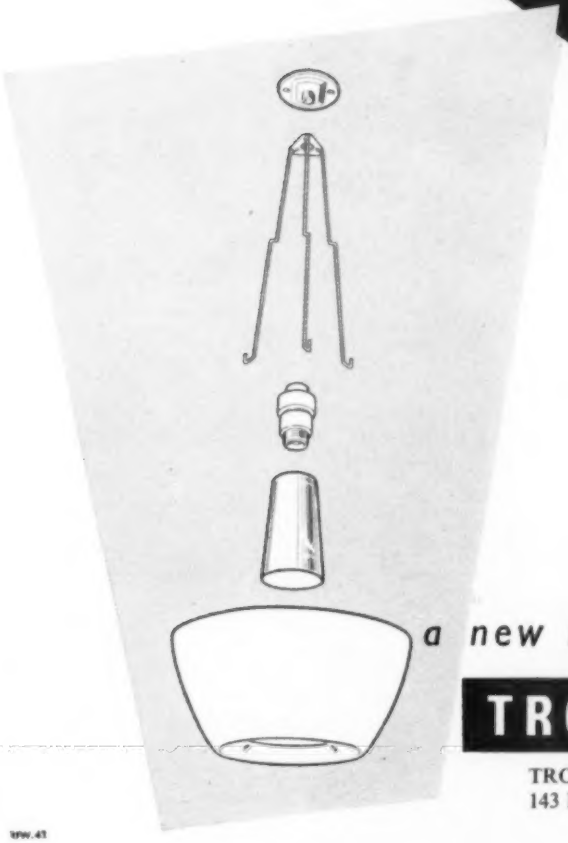

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